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ABSTRACT

The authors describe a data based physical education curriculum designed for low incidence severely handicapped students by Oregon State University in conjunction with Teaching Research. Chapter 1 provides a brief introduction to the physical education curriculum and the Teaching Research model with emphasis placed on the importance of individualized and data based instruction. Chapter 2 addresses the basic principles underlying the behavior modification approach that is utilized in the Data Based Gymnasium. Chapter 3 summarizes the principles of behavior programing in the Data Based Gymnasium and illustrates the forms used for tracking those behaviors. Some examples of how programming and tracking occurs are given. It is explained in a fourth chapter that gymnasium management, like classroom management, includes the welding together by a teacher/manager of the curriculum containing complete scope and sequence, a data keeping system, materials and reinforcers, aides, volunteers, and parents. Chapter 6 describes the Game, Exercise, and Leisure Sport Curriculum; placement procedures in the curriculum; and the development of the physical education individualized education program. Chapter 6 covers ways of tracking a student's performance in the acquisition of a skill; while Chapter 7 outlines guidelines for volunteers. Chapter 8 considers small group activities for the severely and moderately handicapped. The utilization of medical support services is the focus of Chapter 9. A final chapter points out three ways in which parents can be involved in their children's education, including the use of parents as volunteers. Appended are examples for the Game, Exercise, and Leisure Sport Curriculum. (SB)

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A DATA BASED GYMNASIUM

A Systematic Approach to Physical Education for the Handicapped

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Major portions of this text have been adapted for Physical Education from A Data Based Classroom for the Moderately and Severely Handicapped, Fredericks, H.D., Baldwin, V.L., Moore, W., Piazza Templeman, V., Grove, D., Moore, M., Gage, M.A., Blair, L., Alrick, G., Wadlow, M., Fruin, C., Bunse, C., Makohon, L., Samples, B., Moses, C., Rogers, G., Toews, J., 3rd Edition, Instructional Development Corporation, Box 361, Monmouth, Oregon 97361, 1979.

Throughout this book, the pronouns he and she are both used. This is done to avoid the common stereotype that all handicapped children are males or that only females teach handicapped children.

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Chapter 1

OVERVIEW OF THE MODEL

The Education for All Handicapped Children Act of 1975, Public Law 94-142, assures handicapped children the right to equitable educational opportunities. Although Public Law 94-142 builds upon previous legislation, it mandates key provisions which, prior to its passage, were not routinely accepted by all states. For instance, all handicapped children must have an individualized educational program (IEP), which includes educational goals and objectives jointly developed by parents and school officials. Public Law 94-142 also indicates that handicapped children must be educated in the least restrictive alternative. The educational placement options, therefore, must be varied and suited to the individual needs of each student.

This education bill of rights for handicapped students also broadens the traditional definition of special education. Whereas previous views of the term special education have spoken to the academic needs of the student, PL 94-142 defines special education as including not only traditional classroom instruction but more.

> "Special education means specially designed instruction, at no cost to the parent, to meet the unique needs of a handicapped child, including classroom instruction, instruction in physical education, home instruction, and instruction in hospitals and institutions."

Fortunately, handicapped children can no longer be denied access to programs such as physical education which have traditionally been available to non-handicapped students.

Physical Education

The mandate that physical education services must be provided for handicapped students has generated a great deal of discussion among educators. Some have argued that the physical education program should be the same as that offered to all other students. While it is wrong to argue that placement in the regular physical education program is not suitable for some handicapped students, it is equally wrong to argue that this placement is appropriate for all handicapped children. This is particularly true for those students who are severely handicapped. Serious motor deficiencies and/or failure to respond cognitively to even basic game structure prevents many severely handicapped students from participating in a traditional physical education curricula.

Recognizing this problem, Oregon State University, in conjunction with Teaching Research, has developed a data based physical education curriculum for low incidence severely handicapped students (see Appendix A for examples). This curriculum has been successfully employed with severely handicapped students enrolled in the National Model Program for Severely Handicapped Children conducted by Teaching Research in Monmouth, Oregon.

Curriculum Overview

The curriculum is divided into four sections. The first section, Movement Concepts, deals with movement through space in one's immediate personal environment to movement skills in more complex environments. Section two includes skills found in many of our popular elementary games. Physical fitness skills essential for survival in modern society are included in section three. The last section focuses on some popular lifetime leisure skills. It is believed that this curriculum provides a bridge between therapeutically oriented motor programs and the more advanced physical education experiences which include highly organized game, sport and physical fitness skill. The ultimate goal is to equip severely handicapped students with essential prerequisite skills to enable them to use these skills in more normal settings. The OSU/Teaching Research curriculum is systematic, data based, and consistent with the definition of physical education in PL 94-142. Unfortunately, in the area of physical education, there are very few curricula which are specifically designed for the severely handicapped (Geddes, 1974), and those which have been reported are either geared too high or are entirely therapeutic in nature. Wessel's (1976) I CAN program, for instance, while very successful with the trainable mentally retarded is not suitable for low functioning, severely handicapped youngsters.

Curriculum Philosophy

The design of the OSU/Teaching Research Physical Education curriculum is consistent with the procedure employed successfully by Teaching Research for several years and described in A Data Based Classroom. Concepts which form the foundation of the model include the following:

1) Every student, regardless of handicapping condition, can learn. If a student is not learning, the fault lies not with the student but with the educational setting. The student will learn at his maximum rate or potential if the teacher has identified and utilized the correct combination of environmental factors. If the student is not learning, the teacher must experiment by modifying either the cue or consequence or by reducing the behaviors desired to smaller steps (task analysis) so that the student is able to achieve. These modifications to the environment must be done systematically. The data which result from the student's attempt to perform the desired task should be carefully recorded so that an analysis of effects produced by the various changes in cue, behavior and consequence can be made.

2) Handicapped students learn in accordance with the same learning principles as normal students, only usually slower. Because handicapped students learn more slowly than a normal student, they require more extensive and intensive education to compensate for their slower learning rates. This implies a longer period spent on education activities, but because it is generally impossible to extend the time of the school day, the extended period of education must be implemented in the home with the parents assuming responsibility of conducting part of the instruction.

3) There is no way of determining the extent to which a student will progress. Therefore, no ceiling is placed on the curriculum; the teacher must be prepared to take the student as far and as fast as one can go. Thus, the curriculum extends from very basic skills such as executing various body actions while standing to more advanced game skills such as catching and throwing.

4) Because the range of individual abilities among a handicapped population is usually greater than the range of abilities among a "normal" population, the physical education teacher of the severely handicapped must conduct individualized programs. All materials must be sequenced to meet the wide range of individual needs.

5) Because of the wide range of individual differences in the severely handicapped population and oftentimes their unmanageability due to previous ineffective training, effective instruction can oftentimes only be achieved in a one-to-one relationship. Therefore, the utilization of paraprofessionals to provide individualized instruction in the classroom is considered mandatory.

6) No student is refused admittance into the gymnasium because he is non-ambulatory. Suggestions for modifying activities to accommodate orthopedically and neurologically impaired students are included with the physical education curriculum.

7) Physical education is an integral component of the educational curriculum for severely handicapped students. As an important area, it is essential therefore, that physical education curricular materials adhere to the same standards expected of other academic areas. Instructional programs should be sequenced, task analyzed, and data based so that performance changes in physical education skills can be determined.

Summary

Within this chapter, a brief introduction to the OSU/TR physical education curriculum and the Teaching Research model has been provided. The intent of the curriculum is to provide severely handicapped students appropriate physical education experiences. Emphasis is placed on the importance of individualized and data based instruction. The instructional system may at first seem overwhelming, perhaps not realistic, to educators and administrators who are accustomed to physical education classes of thirty-five or more students. Volunteers, parents and paraprofessionals are absolutely essential to the entire management of accountable programs for students with severe learning needs. The physical education environment is not an exception to this rule. In essence, realistic physical education outcomes for severely handicapped students can be achieved only in programs that are individualized and implemented with the assistance of aides and volunteers.

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Chapter 2

LEARNING APPROACH

Introduction

The basic approach which underlies many effective instructional programs for the moderately and severely handicapped is known as behavior modification. In other circles, the general strategy is called operant conditioning or reinforcement therapy. The essence of this approach is that the instructor systematically makes maximum and efficient use of the environment to assist a student in learning a behavior or to assist a student in extinguishing an undesirable behavior.

A single chapter such as this is inadequate to discuss all the principles and ramifications of behavior modification and its accompanying teaching methodology. A complete discussion of the theory and its methodology written for parents and teachers previously unexposed to this information is contained in the book Isn't It Time He Outgrew This? by Baldwin, Fredericks and Brodsky (1972) and in pamphlets by Vance Hall (1972). More detailed discussion for those interested in expanding their knowledge about behavior modification are contained in Bijou and Baer (1966); Millenson (1967); Ullman and Krasner (1965); Ulrich, Stachnik and Mabry (1966, 1970, 1974); Verhave (1966); and Krumboltz and Krumboltz (1973). This chapter provides only an overview which hopefully will allow the naive reader to progress through the remainder of this volume with a sufficient understanding of the learning approach and methodology utilized in the Data Based Gymnasium.

The foundation of behavior modification has three essential elements: 1) the stimulus, or as we shall refer to it in this chapter, the cue. This is the instruction or material presented to the student; 2) the behavior, or the task which the student is to learn or do; and 3) the consequence, or the feedback that the student receives after responding. These elements will be examined repeatedly in relation to their use in the Data Based Gymnasium.

Cue

The cue is the sign, signal, request, or information that calls for the occurrence of a behavior. It is synonymous to the instructions or materials presented to the student. Cues are those things in the environment that "set the occasion" for the student to behave. For instance, "Come to me, Johnny" is a cue for the student to respond to verbal instructions and to move toward you. The presentation of a ball which the student is to throw is a cue. Thus, a cue can take the form of any instructional materials, verbal, printed or gestural, that are presented to a student. The concept of cue includes all the verbal instructions by the teacher. It includes the gestures of the teacher. It can include the ringing of a bell or the sounding of a timer if this is the signal for the student to act in some way. It can range from the most elaborate set of purchased instructional materials to the simplest teacher-made materials.

Most teachers concentrate on cues. Their primary concern is the way in which they present a lesson to the student. The building of cues is a major industry within the United States. Educational materials sold by sales people usually can be categorized as cues. Although cues are important, they represent only one-third of the learning model.

Rules for Appropriate Cueing

There are some basic rules for appropriate cueing in the Data Based Gymnasium. These will be summarized here and discussed more fully in Chapter 7, Volunteers: Training and Use.

Each new behavior to be learned by a student will be preceded by a cue. In formal individual instruction, the cue will be specified on the program cover sheet. Its wording should not initially be changed or rearranged since the student's receptive language may be too limited to understand the modified language. The language of cues is important; they should be delivered in a language style which the student is capable of understanding. Ensure that the cue is specific. For instance, instead of "Gym is now over", a better cue would be "Go shower and dress". The final guideline relative to language is to deliver the cue in command or request form unless one is prepared to give the student an option.

A cue should not be repeated until a response is made by the student. (An exception to this is during the correction procedure when the cue is repeated. This procedure is discussed in Chapter 7.) Repeating cues to students teaches them to respond only to repeated cues. The only time a cue is repeated in this setting is when a student fails to respond or responds incorrectly. At that time, the student is informed that his response is incorrect; the cue is repeated; and the student is assisted in the completion of the task and socially reinforced. This procedure is known as the correction procedure.

The final rule relative to cues is that they should not be weak. This term covers a multitude of potential faults. The cue should not be verbalized in a voice too low to be heard nor should a cue be delivered without first obtaining the attention of the student. If total communication is being used with a student, the cue must contain both a verbalization and a manual sign. The absence of either makes the cue weak. The cue must be directive and not offer the student choices. The following are examples of verbal cues that are weak in that respect, "Would you like to work?", "Time to run around the gym, O.K.?", "Can you find the basketball?" Instead the verbal cues should be, "It is time to work," "Time to run around the gym" and "Find the basketball."

Behavior

The second major element of this approach is behavior. Behavior is anything which a person does. It includes lifting a little finger, blinking an eye, driving a car, or climbing a rope. In the teaching of students, a behavior is a particular task which the student is to learn.

Behavior can be something as simple as having the student extend his arms or as complex as having the student bat a pitched ball.

When teaching a behavior, however, the teacher should constantly keep in mind that most behaviors can be divided into smaller behaviors or pieces of behavior. It is these pieces of behavior which make up the teaching sequence. Take for instance, batting a pitched ball. Batting a ball is called a terminal behavior. Yet it is comprised of a number of small behaviors--placing each foot in proper position, grasping the bat with the left hand and the right hand, putting the bat back over the shoulder, fixing the eyes on the pitcher, then following with the eyes the pitched ball and so on, step by step, through the procedure until the ball is batted. The smaller or less difficult behaviors are called "enabling" behaviors. The learning of them enables the student to learn the terminal behavior.

This process of breaking down a terminal behavior into the enabling behaviors is called analysis of behavior. The physical education teacher is taught to analyze behavior--to break down the behavior to minute sequences and to teach each part as though it were a separate and distinct behavior to be learned. With each new part that is learned, the student must be taught to chain the parts together so they form a smooth flowing larger terminal behavior. (See Chapter 3 for a more detailed discussion of analysis of behavior and examples of completed behavior analyses.)

Enabling behaviors can be chained together either in a forward or backward fashion, and these are logically called forward and reverse chains.

A forward chain is the sequence of enabling behaviors that make up a terminal behavior and are taught in the order in which they occur. For instance, using a forward chain sequence in teaching a student to walk a balance beam (terminal behavior), a forward chain would require the student to step on the near end of the balance beam and take a prescribed number of steps, then be helped to finally step off the balance beam at the other end.

In a reverse chain sequence, the student is helped with the beginning of the behavior; in this case she is helped to step up on the balance beam, helped to take the ten steps, and then she would be asked to independently step off the balance beam. When she demonstrated that she can do this task, the student would be asked, after being assisted through getting on the balance beam and taking the first nine steps, to independently take the last step and step off the balance beam. After demonstrating this behavior, she would be asked to take the last two steps, and so on, until she was performing the entire task independently.

As a general rule of thumb, for motor behaviors the reverse chain sequence is found to be more suitable for the moderately and severely handicapped. One reason for this greater suitability has to do with consequences, for in a reverse chain procedure there is no need to move the consequence from one part of the task to the next since the consequence is always delivered at the completion of the task.

Consequences

Consequences are the third major element of concern. Consequences can be likened to a feedback system. After the student performs a particular behavior, he receives feedback or a consequence for that performance. This consequence tells the student that what he did was correct or incorrect. In a school setting, one might think of the student taking a test, the test graded, and that grade is a consequence of the answers he offered. That consequence can either be pleasing or displeasing to the person receiving it. A consequence that is pleasing to a person is called a reinforcer; a consequence that is displeasing is called a punisher. The basic concept underlying the delivery of consequences is that the reinforcers delivered following a behavior increase the probability of the behavior occurring again; punishers delivered following a behavior decrease that probability.

A reinforcer must be pleasurable to the one experiencing it. Because it is pleasurable, and because the person desires that pleasure and associates a particular behavior with the receipt of the reinforcer, a reinforcer by definition increases the probability of a behavior reoccurring. To a student who is concerned about his grades, an "A" on an examination would be a reinforcer. The "A" tells him his answers were correct and acceptable and this is pleasing to him. A reinforcer can be a wife smiling at her husband across the room as he is expounding at a dinner party. He knows she approves by the smile he receives and he enjoys and appreciates her approval. The student who enjoys social praise may increase the quality or quantity of his performance after being told, "You're doing a nice job". Consequently, reinforcers by definition must be individualized because what is pleasing and therefore reinforcing to one person may not be pleasing and reinforcing to another. The principle of individualization also applies to punishers. A verbal reprimand may be severely punishing (displeasing) to one student whereas another student may not perceive that same reprimand as punishing. Therefore, punishers, like reinforcers, must be individualized.

A basic rule in the use of consequences is to rely, if at all possible, on the natural consequences of the environment. However, with a handicapped student, the natural consequences of the environment are frequently not sufficient. Therefore, if one wishes to make an impact on the student's behavior, it is often necessary to exaggerate those natural consequences. Thus, we often use other types of reinforcers, those which are exaggerated or artificial to indicate to the child that we approve of the behavior and that we want the behavior to occur again.

Reinforcers most frequently used in training programs are categorized as follows: social, tangible, and generalized.

Social reinforcers include words or physical contact--kisses, hugs, squeezes, words of praise or appreciation, anything that lets the student know that his behavior was approved. These are usually considered natural types of consequences because they are consequences which a teacher or parent typically uses. However, we may often times exaggerate these social consequences by being more animated or forceful in our delivery of them.

Thus, we make them somewhat exaggerated in order to ensure that the student understands that we strongly approve of his behavior.

Tangible reinforcers include such things as food, water or juice, playing with a toy, time on the playground, watching television--any item or activity which the student enjoys.

A generalized reinforcer is one which can be traded for either a tangible or social reinforcer. A student may be given a token or a point for performance of a behavior. At a specified time, she can trade these tokens or points for such things as food, free time, or social time with a favorite adult. Generalized reinforcers play a major role in our culture. Adults operate on one such token system, money.

Punishment is another form of consequence. A punisher is a consequence delivered immediately following a behavior to decrease the probability of the behavior reoccurring. The term punishment is often avoided because of its negative connotation. However, if punishment is defined as a process that gives the student feedback that she should not continue a behavior, then it is easy to conclude that punishment is necessary in any effective learning environment. For example, by our definition, saying such things as "No, Sally, throw the ball here, not there", or taking away privileges, or spanking a student are all possible consequences referred to as punishers.

The utilization of both types of feedback, punishers and reinforcers, at appropriate times has been demonstrated as being most efficient. However, the ratio of reinforcers to punishers is also important. Our experience indicates that a ratio of four reinforcers to one punisher delivered to an individual student or to a class as a whole is a minimum acceptable ratio. A ratio less than four to one creates an environment that is adversive to the student who may eventually learn to avoid the learning situation. A low ratio also indicates that the task is probably too difficult for the student, causing her to give incorrect responses. Thus, a low ratio should tell the teacher to further simplify the learning task by perhaps developing a more detailed task analysis. Most teachers who have adopted the model described herein use in their instruction, a ratio from seven to fifteen reinforcers to each punisher.

Time out is a third concept which should be discussed under the broad heading of consequences. Technically, time out is considered neither reinforcement or punishment. The term is a shortened form of "time out from positive reinforcement." However, students who are in a time out condition usually perceive it as punishment, and therefore, operationally it should probably be considered a punisher.

It can be assumed that the gymnasium is typically a reinforcing environment for the student. By the very nature of the activities in the gymnasium and the rewards or consequences which the student receives, most enjoy being there. Occasionally, it may be necessary because of the student's inappropriate behavior, to put him in a time out situation. What this means is that the student has no opportunity while in that time out situation of receiving any reinforcement. He is essentially ignored or not allowed to participate. Time out is usually administered for only a short period of time. For instance, it has been successfully used for students

who begin to "play around" or not attend. It is quite successful with students who are acting out. In a model program, time out has been successfully used by placing the student in an isolated portion of the gymnasium. Only in extreme behavioral disturbances has the student been removed from the gymnasium completely.

Rules for Appropriate Consequating

There are some basic rules for appropriate consequating in the Data Based Gymnasium. Again, these will be summarized here and discussed more fully in Chapter 7, Volunteers: Training and Use.

Consequences, whether they be reinforcers or punishers, should be delivered immediately following the behavior. A delay of more than two seconds in the delivery of a consequence is considered too long a time. With severely handicapped students, the more immediate the reinforcer, the more powerful will be its effect. Moreover, if one delays in consequating, a second behavior may be emitted by the student and the consequence, when delivered, may serve to reinforce or punish the second behavior rather than the targeted behavior.

Tangible and generalized reinforcers should always be delivered in conjunction with social consequences. The reason for this rule is that we frequently are using tangible or generalized reinforcers to exaggerate the feedback which we wish to give a student. However, it will be necessary to eliminate those exaggerated consequences when the behavior has reached the desired level of performance. The social consequences, if not exaggerated, are considered natural and may be used to maintain the behavior after the exaggerated consequences are eliminated. The discussion on fading which follows describes the techniques more fully.

The final rule relative to consequences is that they should not be weak. As with "weak" cues, this term includes many faults. A verbal consequence should always be loud enough to be heard. A tangible consequence must be presented so that the student has sufficient opportunity to enjoy it. For instance, reinforcing a student with free play and removing it two minutes later will rarely be considered as reinforcement by the student. More likely he will perceive it as a tantalizer and not necessarily as reinforcing. Finally, if total communication is being used with a student, a verbal consequence must contain both the spoken words and the appropriate manual signs. The absence of either makes the consequence weak.

Shaping and Fading

This chapter does not purport to be a comprehensive overview of behavioral principles. The chapter's purpose is to acquaint the reader with the learning principles that are utilized in the Data Based Gymnasium. Thus, we have selected to discuss those items of which we feel the reader needs to be aware to understand the remainder of the book. Other than the basic learning paradigm, which has been discussed thus far in this chapter,

there are two additional concepts which need to be briefly described, shaping and fading.

Shaping is a process by which the student is reinforced for behaviors which are not quite at the criterion level the teacher may desire, but which begin to approximate that criterion level. In behavioral terms, this process is called the reinforcement of successive approximations of the terminal behavior. In the training of staff in these techniques, the term shaping is used. Let us illustrate. Learning to throw a ball overhand requires a certain motion and accuracy at a specified distance. In teaching the student this skill, the initial teaching efforts are to develop a smooth overhand throwing motion. After that has been achieved, accuracy is obtained by having the student throw at a target to achieve a prescribed degree of accuracy. The percentage of accuracy is gradually increased at a short distance. When the prescribed criterion level of accuracy is reached, the distance is increased. For shaping to enhance the learning situation, the teacher must be very precise as to what standard of performance is acceptable from the student at a given time.

Within the Data Based Gymnasium, the individual task analyses which comprise the curriculum are organized as shaping procedures. Therefore, the entire teaching sequence for each behavior is already embodied in the task analysis for that behavior by pinpointing the intermediate behaviors necessary to be mastered prior to learning the terminal behavior. In cases where additional shaping is necessary beyond that contained in the curriculum, the teacher is responsible for preparing those additional sequences. This technique, called branching, is discussed in Chapter 6.

Fading is another term with which the reader should be familiar. Fading is defined as the gradual elimination of reinforcers or cues. For instance, in the discussion under consequences, it was pointed out that as soon as possible, the student should respond to the natural consequences of the environment. Therefore, every effort is made to fade or eliminate the exaggerated reinforcers such as food, ringing bells, and tokens, leaving only the social reinforcer or natural consequence. These exaggerated reinforcers are eliminated or faded gradually. Initially, the student may be rewarded with food and social praise every time she performs the behavior. After the behavior is established as part of the student's repertoire of behaviors, she may be given food only every other time the behavior is performed although social praise is received for each correct response. Later, the food is given every third time, then every fourth time, until finally the food is eliminated altogether, leaving only the social praise. The tangible reinforcer (food in this case) is then reserved for the teaching of new behaviors. Social praise given each time a student performs a behavior is not really a natural consequence, but rather exaggerated social praise. Thus, we also systematically fade this exaggerated social praise just as we do other tangible reinforcers. The end result would be social reinforcers delivered intermittently.

Fading also refers to the fading of cues. This fading process, like the shaping process, is usually inherent within the curriculum sequence. For instance, when teaching a severely handicapped student to touch his toes, initially the teacher may model for the student, give a verbal cue

to "Touch your toes" and provide physical assistance to accomplish the task. During the teaching process, the cue of physical assistance is gradually eliminated requiring the student to perform more of the task independently. After the physical assistance is completely faded from the program, the model will be faded, leaving only the verbal cue.

Summary

This chapter has provided a brief description of the basic principles underlying the behavior modification approach that is utilized in the Data Based Gymnasium. Cues, behavior and consequences were discussed as were other terms such as fading and shaping. Rules for using cues and consequences in teaching were presented. The reader is again advised that the chapter is not comprehensive. For someone desiring more complete knowledge of behavior modification and the principles involved, you should refer to some of the works listed as references for this chapter.

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Chapter 3

SOCIALIZATION AND INAPPROPRIATE BEHAVIORS

Socialization

Socialization includes many areas that cannot be put into convenient curricular slots such as language, motor, self help or cognitive skills. Consequently, socialization becomes a catch-all container for many aspects of curriculum. Yet, there is occasional overlap or at least a strong interrelationship with other types of the physical education curriculum. For instance, certain types of socialization, such as responding to others or play activities cannot be engaged in without the previous acquisition of either language activities and/or motor activities. Therefore, when a training program is initiated in the area of socialization, the skills which the student possesses in the other curricular areas must be considered.

As the discussion about socialization unfolds, individualization of programming for students will be quite obvious. Socialization skills cannot be prescribed in the same manner for all students. Certainly, the teacher can require certain behaviors in the gymnasium which apply to all students, such as responding when addressed; yet the degree of verbalization and the type of response may vary with each student. Parents generally tend to desire certain behaviors. Most parents want their children to be "well behaved." However, when one examines the child in an individual home, the definitions of "well behaved" vary considerably. Some parents are insistent on the utilization of "please" and "thank you," while others never attend to these types of remarks. Thus, an individual program for each student in the area of socialization may have to be prescribed. For some students, those who are exhibiting severe behavior problems, the major emphasis of the entire instructional program is not only physical education but the remediation of inappropriate behaviors in all educational environments.

And so, what does socialization include:

Social interaction. Socialization includes proper responding to others--family, teachers, schoolmates, bus driver and friends. Responding, of course, depends upon the language ability of the student. With most students, however, rudimentary responses can at least be elicited. For instance, the student who does not know how to talk but who does answer to his name by looking in the appropriate direction when called can be taught to attend when called and to wave his hand in a motion of "hi" or wave his hand in a motion of "good-bye" to various people.

Play activities. Socialization includes play activities. The "normal" child during growth first engages in solitary play, then moves to parallel play with other children. Parallel play can be defined as a child playing with her own toys but next to another child, perhaps imitating each other but generally not interacting or cooperating in any way in a play situation. The next step in the development of play activities is what is termed as cooperative play--play where children use

the same toys or engage in the same activities and exhibit some interaction. Parents frequently become disturbed because their child is slow in reaching the cooperative stage and go to counselors to determine how to teach their child to engage in cooperative play. It is not unthinkable that the same problem may arise with handicapped children. Moreover, handicapped children are noted for behavior which seems to perseverate--that is, they play with the same toy or the same object over and over in the same way day after day. Parents tend to become upset by this tendency and desire to extend the range of their child's interests. The teacher certainly should also be concerned if this type of perseveration in an activity or with one object persists. This tendency may certainly be demonstrated in a free time situation in a physical education program. Students learn through play and thus it is important that they engage in a variety of play activities. Consequently, those students who perseverate in one activity should be encouraged to engage in other activities and may need an individual program to insure that this occurs. Such a program would of course put the student in a situation where he would have the opportunity to engage in these other activities and to be reinforced for so doing.

Programming Socialization Behaviors. The principles for programming one of the behaviors described above are the same as those described below under inappropriate behaviors. Some examples of socialization programs are included in the examples which follow to illustrate that the same data forms and techniques are applicable. When programming any type of socialization behaviors, the parents of the student should be consulted. Quite often, treatment for a behavior should be conducted both at school and at home. If so, coordination of that treatment between the two environments is essential.

Inappropriate Behaviors

One of the major areas subsumed under socialization is the control of inappropriate behaviors or behavior problems. Behavior problems are as varied as the individual. The important thing is that each behavior is pinpointed, baseline data obtained, a program established and modifications to the program made as the data dictate.

This chapter cannot discuss all the ramifications or techniques for remediation of inappropriate behaviors. What it does propose to do is to provide the general philosophy under which the data based gymnasium operates and to demonstrate the techniques for data keeping and data management of behavior programs in that environment. A complete discussion of the categories of inappropriate behavior and the sequences recommended for their remediation is contained in A Cookbook for the Remediation of Inappropriate Behaviors which is being prepared by the Teaching Research Infant and Child Center (in press).

Types of Inappropriate Behaviors. For purposes of discussion, inappropriate behaviors have been categorized into four major areas. The first of these is known as self-indulgent which includes tantrumming, crying, pouting, sulking, screaming, tapping, clucking and making nonsense noises not usually included under the definition of self-stimulation

behaviors.

The second behavior area includes all forms of non-compliant behaviors. These include the student who says "no" when asked to do something, the student who does not do something because she forgets, or the student who chooses not to do what is asked. It includes the non-performance of routine behaviors. It also encompasses the student who does the required task but does it poorly, sloppily or incompletely, and the student who does what she is asked but only after repeated commands or requests. Finally, this behavior area includes the student who does what is asked but only with much argument and hassle.

The third behavior area is aggression, both physical and verbal. Such things as hitting, pulling, pinching, striking, pushing, and destroying or taking property are included under this heading. Verbal aggression such as cursing or screaming at someone can also be included in this area although frequently these behaviors are included under the self-indulgent label.

The fourth category of inappropriate behavior is self-stimulatory or self-destructive behaviors. Self-stimulatory behaviors such as filtering, rocking, playing with parts of the body, and self-destructive behaviors which cause damage to the person are the types of behaviors included in this category.

Underlying Principles for Behavior Programming. A student who requires remediation of an inappropriate behavior usually has been engaging in the behavior to be remediated over a period of time. Moreover, adults who have tried to remediate these behaviors usually have tried various approaches for only short periods of time, none sufficiently long enough to allow any favorable behavior change. Not seeing an immediate change, they switched to a different strategy. Thus, there usually has been a history of inconsistency with the student. Therefore, one of the underlying principles on which all the behavior programming must be based is the gaining of consistency in the actions of the adult or adults to the behaviors of the student. To insure that consistency is achieved in the data based gymnasium after a program for inappropriate behaviors or socialization is inaugurated, it maintains for one week prior to consideration of change of that program.

The second major principle under which all behavior programs operate in the data based gymnasium is that the end goal is to bring the student's behavior under the natural consequences of the environment. Since this is the terminal goal, most programming starts with the utilization of natural consequences in the environment such as social reinforcement, ignoring or verbal corrections. Tangible reinforcers or token systems are usually only used after it has been demonstrated that consistent social programs will not achieve the desired behavior.

Steps for Behavior Programming. All behavior intervention programs and all programs to improve socialization have seven steps: 1) Pinpointing and accurately defining the behavior; 2) Baselining the behavior; 3) Establishing a terminal objective; 4) Designing and implementing the be-

havior program; 5) Analyzing the data; 6) Modifying the program as necessary; and 7) Insuring that the behavior change maintains over time. Each of these steps are discussed below.

Pinpointing and Accurately Defining the Behavior. There is a necessity for defining precisely the behavior identified for possible treatment. For example, a tantrumming student may be throwing hismelf on the ground, screaming and kicking. As this behavior is treated, data indicated no reduction in the number or length of the tantrums. However, when observing the student, it is noticed that the student has ceased throwing himself on the floor and now only stands and screams. The throwing himself on the ground and kicking which was part of the original definition of the tantrum has disappeared. Thus, it can be concluded that the treatment procedures which were used were effective in that they produced a less severe form of the behavior. The teacher faced with this change of definition must proceed on the assumption that the behavior is now different. In looking at the original definition of the behavior, that of throwing himself on the ground, screaming and kicking, that behavior no longer occurs at all. Instead, there is a new behavior called standing and screaming. Therefore, a rule of thumb is that when a behavior has changed in definition, it should be treated as a new behavior with its own measurement system and treatment program. This rule necessitates being very precise about the identification and definition of the behavior to be treated.

Baselining the Behavior. After the behavior has been identified, the next step is to take baseline data on the behavior. During baseline, no treatment conditions are in effect. Baseline data is taken for a period of one week. Figure 1 shows the form on which the behavior is tallied, and also shows an example of baseline data being taken on four different behaviors; tantrumming, noncompliance, aggression and greetings. The data taken for tantrumming measures two dimensions of that behavior, the number and the length of each. The frequency is totaled as is the total number of minutes and a rate per day is established which in this particular case is 1.28 occurrences. An average length of time (duration) is established by dividing the number of occurrences into the number of minutes. In this case, the average duration time is 9.22 minutes. In computing items such as compliance, both the number of compliances and number of noncompliances are computed so as to achieve a percentage. In this case, the total number of compliances is 22 and the total number of noncompliances is 46; the percentage of compliance is:

$$\frac{22}{22 + 46} \text{ or } 32\%$$

A word of caution about taking baseline data. If data are not maintained throughout an entire day, then the period of time for which data are taken must be monitored so that a rate can be computed. If only partial daily data are taken, it is preferable to tally that data during the same period of time each day. This will then provide an accurate picture of the frequency with which the behavior is occurring. In the case of such behaviors as compliance where percentage is being tallied, the length of time that the data are taken is not a concern. Since the data being computed is a ratio or a percentage, varied times of day can be used.

Child's Name: Bill

Date Recording Initiated: 7-18

Date Recording Terminated: 7-22

BEHAVIORS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	TOTAL
Tantrumming - Number	I	II	I	III	II			9 1.28/day
Length	11 min	4 14	3	21 II 2	7 10			83 $\bar{X}$ = 9.22
Complies	~~IIII~~	II	~~IIII~~ I	IIII	~~IIII~~			22
Does Not Comply	~~IIII~~ III	~~IIII~~ ~~IIII~~ III	~~IIII~~ ~~IIII~~	~~IIII~~ IIII	~~IIII~~ I			46 % = 32%
Hits Peers	I	I		II	I			5 $\bar{X}$ = 1.0
Answers when Greeted	I	I			I			3
Does not answer when Greeted	II	II	III	I	I			9 $\bar{X}$ = 25%

Figure 1. Baseline Data for Bill for Tantrumming, Aggression, Non-Compliance and Appropriate Responses to Greetings

Self-stimulatory behavior can be measured in a number of ways. If the behavior is of low frequency variety, then a frequency count can be made. If the behavior is high frequency, then the onset of each occurrence can be tallied together with the length of each occurrence. Frequently, however, the onset of such behaviors are difficult to identify or observe. Therefore, a time sample of the behavior can be made, recording with a stopwatch the amount of time the behavior occurs within a set period of time. This can then be computed as a ratio of stimulatory/non-stimulatory behavior and analyzed much like compliance data.

Establishing a Terminal Objective. After the baseline data have been computed, a terminal objective is established for each initiated program. This objective is entered together with the baseline data on the form shown in Figure 2 and Figure 3. In the case of Bill, two programs were felt to be serious enough to warrent treatment, command compliance and temper tantrums. The objective chosen for command compliance was "to increase command compliance to 80% for three consecutive weeks" (Figure 2). The objective specified for tantrumming was "to reduce temper tantrums to a mean of less than one minute duration and a frequency of .14 per week for three consecutive weeks" (Figure 3). In the establishment of both of these terminal objectives, the parents were consulted not only about the objective but also about the treatment program described below.

Designing a Treatment Program. As indicated previously, most programs initially conducted in the gymnasium will use social consequences for behaviors in order to establish a consistent system of responses to the student which in many cases may be sufficient to bring the behavior under control. This approach is easy to conduct and introduces no artificial consequences, there is no need to fade out the artificial consequences. In other words, the natural consequences of the environment will be, through their consistent use, controlling the behavior.

The form used in the gymnasium for designing a program is shown in figures 4 and 5. Figure 4 shows a program for the remediation of non compliant behavior. Each program is numbered down the left hand side and instructions are prescribed as to what to do when the behavior does or does not occur. In this example, for each compliance, the student is to be socially reinforced, and for each non-compliance, the student is to be recued, led through the behavior, and then socially reinforced. This latter example of course is the standard correction procedure used in the classroom which is described in Chapter 7. Figure 5 shows a behavior program cover sheet for the reduction of temper tantrums. The program is numbered. When a tantrum occurs, it is to be ignored; when a tantrum does not occur in those instances when it would normally occur Bill is reinforced socially. In this particular case, the tantrums occur when he wants something which he cannot have. Therefore, if he were to ask for something, be refused, and not tantrum, he would be socially reinforced.

Analyzing the Data. Data are gathered daily on the form shown in Figure 1. These data are analyzed weekly and are compared with the data of the previous week. If the data show an improvement over the previous week, the program remains unchanged. For instance, Figure 6 is a data sheet for increasing command compliance. During the first week of the

Name of Child: Bill Date Program Started: 7-22-77

Program Conducted In: Home ( ) School (X) Both ( ) Date Terminated: _____

Program Objective: To increase command compliance to 80% for three consecutive weeks.

Baseline Data:

Reported Daily ( ) Weekly (X)

	Date	Data	Comments
1	7-22	32%	
2			
3			
4			
5			
6			
7			

If program not completed, but terminated, state reason: _____

Figure 2. Program Data Sheet for Compliance Program for Bill

Treatment Data:

Reported: Daily ( ) Weekly ( )

	Date	Behavior	Synopsis of Program
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Post Treatment Follow-up

Reported: Daily ( ) Weekly ( )

	Date	Behavior	Synopsis of Program
1			
2			
3			
4			

Figure 2 continued

Name of Child: Bill Date Program Started: 7-22-77

Program Conducted In: Home ( ) School (X) Both ( ) Date Terminated: _____

Program Objective: To reduce temper tantrums to a mean of less than one minute duration and a frequency of .14 per week for three consecutive weeks.

Baseline Data:

Reported Daily ( ) Weekly (X)

	Date	DATA Frequency	Length	Comments
1	7-22	1.28 per day	$\bar{X}$ = 9.22 min	
2				
3				
4				
5				
6				
7				

If program not completed, but terminated, state reason: _____

Figure 3. Program Data Sheet for Tantrumming Program for Bill

Treatment Data:

Reported: Daily ( ) Weekly ( )

	Date	Behavior	Synopsis of Program
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Post Treatment Follow-up

Reported: Daily ( ) Weekly ( )

	Date	Behavior	Synopsis of Program
1			
2			
3			
4			

Figure 3 continued

Behavior Program Cover Sheet

Name: Bill

Behavior to be Remediated: To increase command compliance to 80% for three consecutive weeks.

Program No.	(Compliance) When Behavior Occurs do This:	(Non-Compliance) When Behavior Does Not Occur, do this:
1	Socially Reinforce.	Say no; re-cue; lead the child through the behavior; socially reinforce.

Figure 4. Behavior Program Cover Sheet for Bill for Command Compliance Program

Behavior Program Cover Sheet

Name: Bill

Behavior to be Remediated: To reduce tantrums to a mean of less than one minute duration and a frequency of .14 per week for three consecutive weeks.

Program No.	(Compliance) When Behavior Occurs do This:	(Non-Compliance) When Behavior Does Not Occur, do this:
1	Ignore it.	Tantrumming occurs when Bill is requested to do something. Therefore, he will be socially reinforced each time he complies. See compliance program.

Figure 5. Behavior Program Cover Sheet for Bill for Tantrumming Behavior

Treatment Data:

Reported: Daily ( ) Weekly ( )

	Date	Behavior	Synopsis of Program
1	7-29	39%	1
2	8-5	38%	1
3	8-12	52%	2
4	8-19	71%	2
5	8-20	74%	2
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Post Treatment Follow-up

Reported: Daily ( ) Weekly ( )

	Date	Behavior	Synopsis of Program
1			
2			
3			
4			

Figure 6. Second Page of Program Data Sheet for Compliance Program

program, that dated 7/29, the compliance rate increased to 39%. Notice that under synopsis of program the number of the program is entered which appears on the program cover sheet (Figure 4).

During the next week of the program, 8/5, the compliance rate was 38%. This shows a slight decrease from the previous week's 39%. Therefore, there is a requirement on the part of the teacher now to change the program. That change is entered on the behavior program cover sheet. The program decided upon is labeled Program #2. Under the heading of "when behavior occurs, do this", the teacher enters "socially reinforce and give Bill a raisin". For non-compliance, the consequence has not changed. It is "no", recueing, lead the child through the behavior and socially reinforce. On August 12, the data as shown in Figure 6 increased to 52% with Program #2 and on August 19, it increased to 71% with Program #2 and on August 20, it increased to 74% under Program #2. As long as the program is showing continual gain as the behavior approaches the criterion level, the program is not changed.

An exception to the rule which says that the program should be changed if there is no improvement over the previous week's behavior occurs when an analysis of the week's data is made. For instance, overall data for the week may not show improvement but may for the week begin to show a trend. This will be most often manifested in those instances when a new program shows an immediate increase in the inappropriate behavior. As the student realizes that the program is going to be administered in a consistent fashion, one begins to demonstrate a decrease in that behavior. The behavior most often cited in the literature for which this occurs is tantrumming which, when initially ignored, would usually increase in length and frequency before it begins to decrease. However, our experience indicates that this phenomenon occurs in other behaviors such as non-compliance and aggression. Therefore, the weekly data needs to be examined to determine whether or not a reduction is occurring after this spontaneous increase.

There are other exceptions to the rule of changing a program if no improvement is noted. Unusual circumstances may be present all week or for part of the week. If so, the teacher should not respond to the data. For instance, if a teacher is sick and a substitute teacher is employed, during this period of time, the program is not conducted as consistently as should be and consequently, the data reflect this inconsistent response. These data should not be considered for program change. Likewise, if the student has been absent for periods of time, it is better to gather at least three consecutive days of data before deciding to change the program. And of course, in those behaviors in which two dimensions are being measured, such as the tantrumming behavior shown in Figure 3 where both frequency and length are being recorded, a change may only be manifested in one of those dimensions at a time. If such a change is positive, then the program should not be changed.

Modifying the Program as Necessary. This entire process of analyzing data is based upon comparing the current week's data with that of the previous week. A dichotomous decision is made. If the data do not show improvement and do not fall into the three categories of exceptions previously described -- then the program must be changed. If change is

occurring, then the program can remain unchanged.

When the program is to be changed, the general rule is to increase the power of the reinforcer, leaving the punisher constant until all reinforcers have been completely explored. Generally, reinforcers will be sufficient to modify the behavior without ever having to impose a punisher more severe than social reprimand.

Maintaining Behavior Change. After the objective for a behavior program is achieved for the period of time specified in the program data sheet (Figures 2 and 3), the program is put on a maintenance schedule after all tangible reinforcers and high frequency social reinforcers have been faded. The student should be responding to the natural consequences in the environment before the program is considered complete and placed on maintenance. For maintenance, the program is checked at one month, three month and six month intervals. This is done by retaking baseline data for one week at each of those times. If the data indicate that the behavior has not deteriorated, then no further action is necessary. If the data indicate that the deterioration of the behavior has occurred to a degree unacceptable to either the parents or the teacher, the behavior program should be reinitiated.

Summary

This chapter has summarized the principles of behavior programming utilized in the Data Based Gymnasium. It has illustrated the forms used for tracking those behaviors, and has given some examples of how that programming and tracking occurs.

Chapter 4

GYMNASIUM MANAGEMENT

Introduction

Many readers may be familiar with the term classroom management, but few, if any, have used or observed in print the term gymnasium management. Essentially, the expression gymnasium management is synonymous with the term classroom management. The phrase is used to highlight the fact that learning is learning regardless of the educational setting and that the gymnasium like the classroom must be managed to insure educational gains. Gymnasium management like classroom management means that the teacher must use everything at her disposal to accomplish instructional objectives with students. These include people, setting, curriculum and the administrative technique to weld them together.

Physical Education Teacher

The person responsible for teaching physical education to the severely handicapped varies from school district to school district and from state to state. The options usually include one or two persons, the special educator or the physical educator. According to the Rules and Regulations for Public Law 94-142, it could be argued that technically either person is qualified. However, if the local school district has physical educators available to instruct non-handicapped students, it would seem logical that these personnel should be available to instruct handicapped students. In the eventuality that a physical educator is available to teach physical education to the severely handicapped, it is essential that this person articulate closely with the special education teacher. In short, it is necessary for the physical educator to understand not only the student's movement needs, but also basic information such as the student's reinforcement schedule and language capabilities.

The teacher of physical education for the severely handicapped must assume a role as manager of the learning environment. Students with major disabilities require educational settings in which they are instructed individually or in small groups. Such an arrangement is possible only if the teacher has personnel who can assist with instruction.

Volunteer Roles

Successful implementation of the Teaching Research Model, whether in the classroom or the gymnasium, requires the availability of volunteers. It is this person who is frequently the individual most responsible for conducting the individual skill acquisition program. Selecting and training volunteers is therefore a critical process. Even in those districts where physical educators teach the severely handicapped, the special educator normally assumes the lead role in the training of volunteers.

The special process for the training and use of the volunteers is found in Chapter 7.

Aide Role

Self-contained classrooms for the severely handicapped normally are staffed with a special educator and a professional aide. The latter individual assumes a variety of important functions. The aide is frequently asked to train and supervise the volunteers. In the absence of the teacher, the aide can be looked to as the teacher's temporary replacement.

The aide can also play an important part in the conduct of the physical education program. In those districts which do not have professionally trained physical educators, the aide's physical education responsibility would be determined by the special education teacher in a manner similar to that for other program areas. The aide's role in districts which do have physical education teachers would be primarily to assist in the transition of students from one teacher to a second teacher. The aide provides an important link between the classroom and gymnasium setting. Not only can the aide assist in the physical education instructional process, but can also fulfill an important role in providing consistency in implementing the important language and behavior programs. Physical education teachers, although knowledgeable in subject matter, often find themselves at a disadvantage in conducting programs with the severely handicapped because of the unique behaviors frequently exhibited by such individuals. The uncertainty about individual behaviors coupled with the physical educator's lack of information or experience with individual students can be corrected by the presence of an aide who spends the majority of the day with the students.

Gymnasium

The presence of a gymnasium is not essential for the conduct of appropriate physical education programs. For some students, the large open space found within gymnasiums may actually inhibit learning. Many of the programs found within the physical education curriculum can be conducted within the confines of a classroom, hallway, or some other available space. Regardless of the area used, the most important concept is to identify individual teaching stations so that volunteers can conduct the individualized programs without interruption. For some of the basic game skills such as throwing and kicking, a larger area such as a cafeteria, hallway or gymnasium is desirable so as not to disturb or endanger others.

A sample list of equipment needed to conduct the physical education programs is indicated below:

- mats (4' x 6')
- sets of shapes:
  - circle (3' radius)
  - square (4' sides)
- Basketballs
- Baseballs, bats, gloves
- Softballs
- Volleyball

triangle (4' equivalent sides)
rectangle (4' x 2' sides)
balls (4")
balls (8½")
measuring tapes
classroom chairs
Soccer ball
Tricycle
Bicycle
hula hoops
tennis balls

Objectives

Certainly the major element in gymnasium management is the designation of long and short range instructional objectives for each student. These should be extracted from a curriculum with a detailed scope and sequence of behavioral objectives. A description and some examples of instructional sequences from such a curriculum are contained in Appendix A.

Curriculum, Assessment and Data Keeping

To utilize the curriculum properly there must be an initial assessment of the student. This assessment includes a determination of the skills in the curriculum which the student possesses and those which he does not possess. This initial assessment is necessary if the teacher is going to conduct individual programming of students to the extent specified in this model. In addition, the teacher needs an easy system of keeping track of the student's acquired skills as he moves through the instructional scope and sequence. Thus, a data keeping system which allows for initial assessment and easy updating of the student's program is mandatory in a good gymnasium management system. Chapter 6 discusses that system in detail.

The Pupils--Physical Limitations and Reinforcers

The teacher needs to know what physical limitations the student has which may alter the teaching approach to the student. Sensory deprivation, such as partial or total loss of sight or hearing must be determined as must all physical anomalies which may interfere with the movement capability of the student. However, knowledge of the students in the classroom for the moderately and severely handicapped also focuses on those activities and things which can serve as reinforcers for the student. Thus, a reinforcer list for each student is prepared and becomes an essential element in the gymnasium management system.

Parents

A final component to complete the picture is the utilization of parents who are an essential part of the instruction team. Much instruction can be carried out by parents in the home. Parents can serve not only to maintain skills learned in physical education, but also can actually accelerate learning. Thus, coordination with parents is an essential element in gymnasium management. Chapter 10 gives the particulars of this coordination.

The Clipboard System

All of these elements must be brought together so that they become a cohesive system, facilitating the instructional process of the student. The administrative device that accomplishes this coordination is the clipboard of the student. The clipboard tells the volunteer what to do, where to record the information (data), and how to interact with the student. It is the communication channel through which all instruction to volunteers and aides is given and through which feedback comes to the teacher so that the student's individual program can be modified.

Each student's clipboard contains the weekly cover sheet which specifies all programs, including the physical education program in which the student is currently engaged. This weekly cover sheet has a space for the volunteer, aide or teacher to initial each program as it is conducted on a given day. A circle inserted in any schedule means that the program is a high priority and should be conducted first. A student may be engaged in as many as five to a dozen programs. The number of programs will be determined by the number of volunteers available since it is desirable to conduct each program daily.

A sample weekly cover sheet is shown in Figure 1. Robert, the student for whom the cover sheet has been prepared, is scheduled for six skill acquisition programs: (1) Physical Education - underhand throw; (2) Eating - finger foods; (3) Writing - reproduces cross; (4) Language - maintains eye contact; (5) Reading - finds colors; (6) Fine Motor - picture puzzle. The initials on the right hand side of the form show that the program has been run and by whom. Blank squares indicate that the program was not conducted. For instance, the chart represents the situation as of Wednesday immediately prior to the start of class. "Reading - finds colors" was not conducted on Tuesday. The circle opposite that program on Wednesday indicates that that program should be conducted first.

Immediately following the weekly cover sheet on the clipboard is the consequence list, shown as Figure 2, which lists the things that are reinforcing to the student. This list provides the volunteer the necessary information to choose reinforcers for the student. On the sheet with the consequence list is a section devoted to Behavioral Comments, which also provides instructions on how to handle behavioral problems that may occur during an instructional period.

The third page on the clipboard is the language sheet. The language sheet is divided into three parts: (1) receptive language; (2) expressive language; and (3) new vocabulary. The receptive language section defines the degree of understanding which the student has of spoken language. In Figure 3, the receptive language entry shows that Robert understands simple one-concept commands.

The expressive language section describes the degree of language complexity which the student is able to emit. For instance, Figure 3 under expressive language indicates that Robert says most speech sounds and will imitate words by giving the initial sound of the word.

Teaching Research Infant & Child Center

WEEKLY COVER SHEET

Name: Robert

#	Program	Mon	Tues	Wed	Thurs	Fri
1.	Physical Education, underhand throw	F	MM			
2.	Eating - finger foods	JW	DW			
3.	Writing - reproduces cross	TF	DW			
4.	Language - maintains eye contact	JW	HL			
5.	Reading - finds colors	MM		○		
6.	Fine Motor - picture puzzle	JW	HL			
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

MM Signature of Volunteer

Figure 1. Sample Weekly Cover Sheet

Teaching Research Infant and Child Center

Consequence List

Child's Name: Robert

I. Reinforcement List

A. Social

1. That's right!
2. Good (name task).
3. Wow!
4. Good for you!
5. Lift in the air.

B. Primary - Tangible

1. Vibrator - likes to be tickled on tummy.
2. Music box - wind it up and hand it to him.
3. Cookies
4. Juice
5. Balloon - likes to throw in air.
6. Stars on paper for writing program.

II. General Comments

1. Make sure Robert is attending to task before giving cue.
2. If he is not attending to task, ignore him by looking away for a period of 30 seconds to one minute, then resume task.
3.

Figure 2. Sample Consequence List Sheet

TEACHING RESEARCH INFANT AND CHILD CENTER

Language File

Child's Name: Robert

I. Receptive Language

1. Understands simple one-concept commands.
2.
3.
4.
5.

II. Expressive Language

1. Says most speech sounds
2. Will imitate words by giving initial sound.
3. Be sure Robert says the initial sound when repeating a word. He can do it.
4.
5.

III. New Vocabulary

1. ball	6.	11.	16.
2. boy	7.	12.	17.
3. milk	8.	13.	18.
4. cookie	9.	14.	19.
5.	10.	15.	20.

Figure 3. Sample Language Sheet

The new vocabulary sections include new words or sounds which the student has acquired that need to be reinforced. In all programs, including physical education, the consequence and language sheet must be used by all teachers, aides and volunteers. Whether in the gymnasium or in the classroom, consistency in behavior treatment and communication procedure is essential for successful programming.

Following the language sheet are three sheets for each program listed on the weekly cover sheet - Figures 4, 5, and 6 - a behavioral sequence sheet, a program cover sheet, and a data sheet. The behavioral sequence sheet (Figure 4) contains the task analysis of the skill, and the program cover sheet (Figure 5) describes how an individual program is to be run. In Figure 5, a volunteer can see what the verbal and non-verbal cue is, the correction procedure, materials to be used, the reinforcement ratio and the criterion level of success. All this information helps a volunteer determine how a program is to be run. The last form is the data sheet (Figure 6). It tells the teacher how a student performed on a program so that she can make update decisions. The use of the data sheet and how one updates will be discussed in detail in Chapter 6.

If there are six individual programs for the student (the average number), there will be a behavioral sequence sheet, a program cover sheet, and a data sheet for each of those programs on the clipboard. A schematic of the entire clipboard is shown in Figure 7.

Summary

Classroom management includes the welding together by a teacher/manager of the curriculum containing complete scope and sequence, a data keeping system, materials and reinforcers, aides, volunteers, and parents. Built into the management system is a communication system that allows instructions to be easily delivered to the aide and volunteers and which provides a feedback channel to the teacher/manager. This system provides the necessary link between experiences in the classroom and gymnasium.

B. Underhand Throw

Terminal Objective: The student, standing, will perform an underhand throw swinging the arm backward and then forward while stepping forward simultaneously with the opposite foot and releasing the ball at the end of the swing in a manner which causes the ball to fly in the direction of the target.

Prerequisite Skills: Game Skills - Basic, Skill A

Phase I	With the student standing 5' from target and with knees bent, student will swing arm backward and forward releasing the ball at end of swing in direction of the target. Teacher assists student in swinging arm back and then forward.
Phase II	With student standing 5' from target, teacher assists student to swing arm back and allows student to swing arm forward releasing ball at target at end of swing.
Phase III	With student standing 5' from target, student will independently swing arm backward and forward, releasing ball at end of swing and in direction of target.
Phase IV	With student standing 5' from target with one foot forward and one foot back and knees bent, student will swing arm forward releasing ball at end of swing and in direction of target.
Phase V	With student standing 5' from target and with knees bent, student will swing arm backward and forward releasing ball at end of swing and in the direction of the target while teacher is pushing student's opposite foot forward simultaneously with swing.
Phase VI	Student, standing, will perform an underhand throw swinging the arm backward and then forward while stepping forward simultaneously with the opposite foot and releasing the ball at the end of the swing in a manner which causes the ball to fly in the direction of the target.

The following steps apply to Phase VI.

Steps

1. 7'
2. 12'

Figure 4. Sample Behavior Sequence

B. Underhand Throw, Continued

Suggested Materials: Four inch rubber ball and a 3' by 3' target placed on the floor.

Teaching Notes:

1. For those students in wheelchairs, the underhand throw can be performed with the student sitting in the wheelchair thus eliminating the need for the above prerequisite body positions.

2. For non-ambulatory students who are not in a wheelchair, ball rolling could be taught from a supported sitting position.

Figure 4 continued

Pupil: Robert Date Started: April 2, 1979 Date Completed:	Program: Underhand throw
Verbal Cue: "Robert, throw the ball at the target"	Materials: 1. Hallway 2. Physical education time 3. 4" ball 4. Target 5. Reinforcer
Non-Verbal Cue: Teacher demonstrates and points to the target.	Reinforcement Procedure: Give social reinforcement upon completion of task.
Correction: "No. Robert, throw the ball at the target." Physically assist him to do step correctly and socially reinforce.	Criterion: Three consecutive correct responses before given next step.

Figure 5. Sample Program Cover Sheet

Teaching Research Infant and Child Center Raw Data Sheet

Name: Robert Program: Underhand throw

X = Correct
O = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Baseline	IV		4 o/o	3 o/o	2 o/o	1 x/x								4/2
Social	IV	2	x	x	o	o	x	x	o	o	o			4/3
Social	IV	2	o	x	x	o	x	o	o	o	o			

Figure 6. Data Sheet

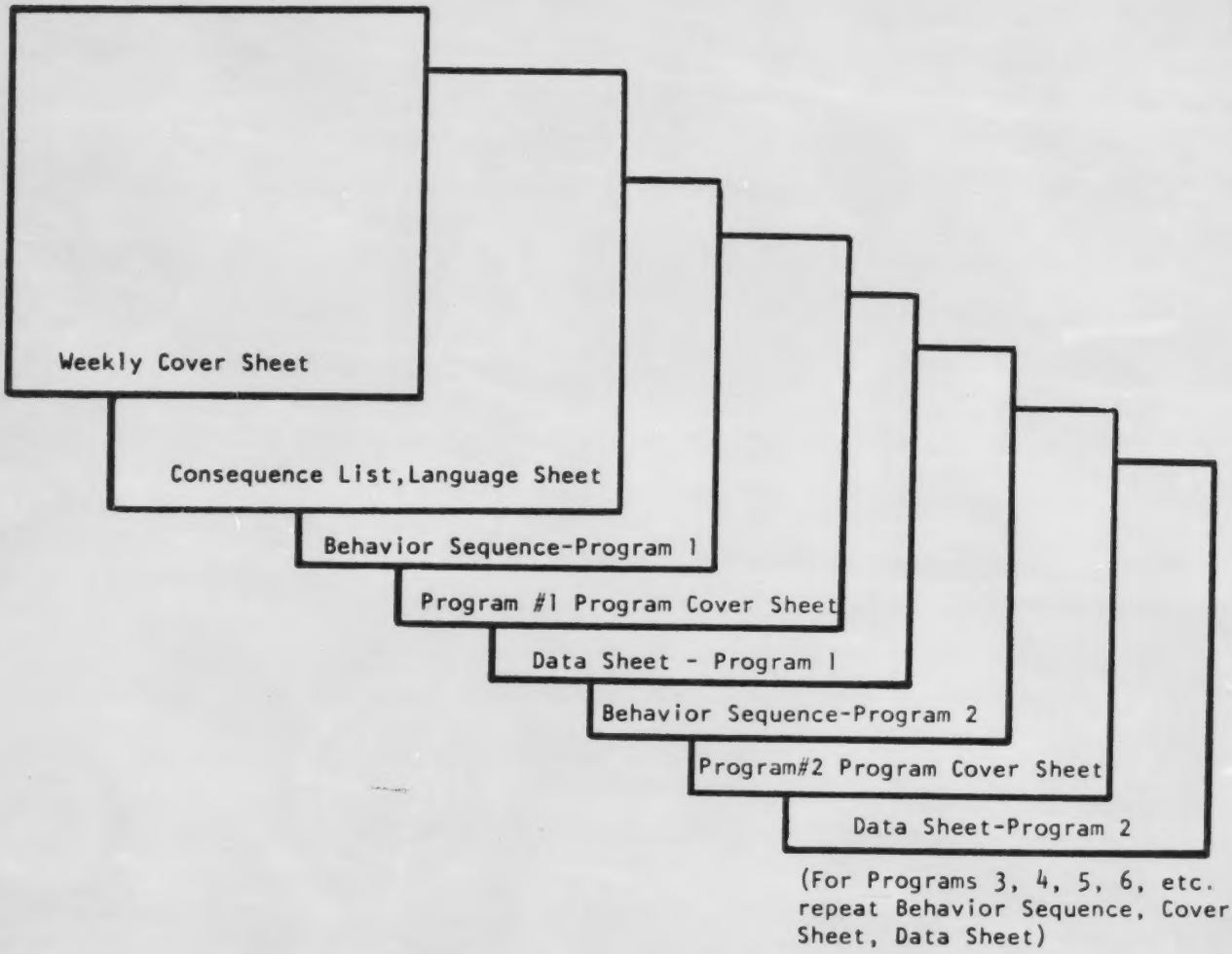
Weekly Cover Sheet
Consequence List,Language Sheet
Behavior Sequence-Program 1
Program #1 Program Cover Sheet
Data Sheet - Program 1
Behavior Sequence-Program 2
Program#2 Program Cover Sheet
Data Sheet-Program 2
(For Programs 3, 4, 5, 6, etc. repeat Behavior Sequence, Cover Sheet, Data Sheet)

Figure 7. Schematic of a Clipboard

Chapter 5

GAME, EXERCISE AND LEISURE SPORT CURRICULUM

Historical Development of the Curriculum

This Game, Exercise and Leisure Sport curriculum is the result of a concerted effort between staff from the Physical Education Department at Oregon State University (OSU) and staff of the Special Education Department at Teaching Research. Its initial development began in the fall of 1977 when it became apparent that many physical education curricula for the handicapped did not provide adequate programming for the student who was profoundly or severely handicapped. Curricula such as the I CAN curriculum are quite comprehensive in their scope but are not designed to deal with the student who is severely or profoundly handicapped and are not geared to the low functional levels often found with this population. The sequences found in this curriculum are designed to fill that gap.

The initial attempts to develop the sequence were completed by both staffs from OSU and Teaching Research. Placement testing procedures were devised to articulate with the sequences and time was spent testing these sequences on severely and profoundly handicapped students in classrooms at Teaching Research. As a result, several revisions of the curriculum occurred, including extensive field testing of the curriculum items in classrooms other than those at Teaching Research. The curriculum as it now stands has been extensively field tested and the curriculum has been shown to provide a guide for teaching severely handicapped students basic physical education skills. This curriculum will, of course, continue to be revised as more and more teachers have the opportunity to use the curriculum and suggest changes in sequences.

Rationale for the Curriculum

Since the sequences and task analyses within this curriculum are written in the form of individual prescriptions for the student, it will not be necessary for the teacher to write an individual prescription for each student. It must be emphasized, however, that no curriculum can provide all the needed sequences and task analyses for any particular student. The responsibility for altering the sequences to fit the student's needs is the responsibility of the teacher in the classroom. It is felt, however, that given this curriculum and the skills to make the alterations as necessary, that the teacher can provide appropriate game, exercise and leisure sport experiences for handicapped students.

The curriculum is a series of behavior analyses (task analyses) of basic physical education skills. The entire concept of task analysis is based on the fact that for a student to learn a complex skill, it may be necessary to break down that complex skill into more simple skills and to teach each of those simple skills separately. This curriculum is designed to be used in a program where individual objectives are designed for each student. The procedure of placing each student in the curriculum is de-

scribed in a subsequent portion of this chapter. Once the student is placed in the curriculum, it is anticipated that she will be moved through the various behaviors according to priorities established by the teacher and parents or surrogate parents. It is anticipated that each student's programs through the various steps of the curriculum will be tracked through a continuous data system as described in Chapter 6 of this book. The curriculum is organized into major areas, skills, phases, and steps. This organizational pattern is consistent with other organizational patterns found within Fredericks, et al, The Teaching Research Curriculum for the Moderately and Severely Handicapped, 2nd Edition (1980) and Fredericks, et al, The Teaching Research Upper Level Curriculum for Moderately and Severely Handicapped (in press). As an example, take the major area in the curriculum called Game Skills, Basic. The first skill in Game Skills, Basic is the underhand roll. Within the underhand roll skill there are eight phases (Figure 1). The phases are essentially task analyses of the terminal objective listed for the skill of underhand roll. The higher the phase number, the more advanced the skill.

One additional area remains in the curriculum--steps, which are further breakdowns of a phase. Steps, for example, may be either differences in length of time or differences in distances.

Although this curriculum is designed for severely and profoundly handicapped students, many teachers will have a majority of students who are not handicapped. The curriculum, however, can still be used as a guide. The detailed breakdown of phases will, however, be necessary. For example, in the underhand roll phases of the curriculum, it is not necessary to take a nonhandicapped student through each of the phases listed in the underhand roll skill. It is, however, a necessary skill that many students need to practice. Nonhandicapped students may be taught this skill with the teaching emphasis on more precision with regard to form and style. The teacher who uses this curriculum should always strive to have the student accomplish the terminal objective in the skill before attempting to teach the phases and should always be trying to have the student accomplish a particular phase before teaching the steps in a phase. There is no need to move every student through the curriculum step by step, phase by phase. The student's movement through the curriculum should be dependent upon her ability and the rate at which she can acquire skills.

On the other end of the continuum, of course, is the student who is so severely and profoundly handicapped that the task analyses for some sequences provided in this curriculum still do not provide small enough steps or phases. In these instances, it is necessary to engage in branching. Branching means adding additional steps or phases to one of the existing programs. For example, when teaching the skill of striking, for a student to move from Phase IV to Phase V, the teacher merely changes the amount of assistance from holding halfway down the student's arm to holding the student's elbow. For some students, that may be too large a phase and the program would have to be branched. In this case, the teacher would write Phase Va which might indicate that the teacher's hand moves from halfway down the student's arm to three-quarters of the way down. Thus, when the student is able to meet criterion at this phase, the teacher could move to Phase V which is placing one hand on the student's elbow. Despite the fact

A. Underhand Roll

Terminal Objective:	Student, from a standing position, will perform an underhand roll swinging the arm backwards and then forwards while stepping forward simultaneously with the opposite foot and releasing the ball at the end of the swing in a manner which causes the ball to roll in the direction of the target.
Prerequisite Skills:	Fine and Gross Motor, Grasping Objects with Hand
Phase I	Student, while sitting in a chair 5' from target, is given a tennis ball; teacher assists student to swing arm back and then forward, releasing ball toward target.
Phase II	With student sitting in a chair 5' from target, teacher assists in swinging arm back and allows student to swing arm forward, releasing ball at target at end of swing.
Phase III	With student sitting in a chair 5' from target, student independently swings arm backward and forward releasing ball at end of swing and in direction of target.
Phase IV	With student standing 5' from target and with knees bent, student will swing arm backward and forward releasing ball at end of swing and in direction of target.
Phase V	With student standing 5' from target with one foot forward and one foot back and knees bent, student will swing arm backward and forward releasing ball at end of swing and in direction of target.
Phase VI	With student standing 5' from target and with knees bent, student will swing arm backward and forward releasing ball at end of swing and in direction of target while teacher is pushing student's opposite side foot forward simultaneously with swing.
Phase VII	With student standing 5' from target and with knees bent, student will swing arm backward and forward, releasing ball at end of swing and in direction of target while teacher prompts student's opposite side foot forward simultaneously with swing.

Figure 1. Underhand Roll

A. Underhand Roll, Continued

Phase VIII — Student, from a standing position, will perform an underhand roll, swinging arm backward and then forward simultaneously with the opposite foot and releasing the ball at the end of the swing in a manner which causes the ball to roll in the direction of the target.

The following steps apply to Phase VIII.

Steps:

1. 7'
2. 12'

Suggested Materials: A tennis ball and a 3' by 3' target placed on the floor. Target should be 10' from student.

Teaching Notes:

1. For those students in wheelchairs, the underhand roll can be performed with the student sitting in the wheelchair, thus eliminating the need for the above prerequisite body positions.

2. For non-ambulatory students who are not in a wheelchair, ball rolling could be taught from a supported sitting position.

Figure 1 continued

that branching programs may at times be necessary for certain students, the basic curriculum provides a good foundation for these. Usually, only a few branching steps need to be written and added to an existing program to modify it and provide a suitable program for even the most severely handicapped student. This maintains one of the main purposes of the curriculum, which is to save the teacher time.

It should be remembered that many of the skills within the curriculum may be taught simultaneously. A teacher with a severely and profoundly handicapped student may be teaching skills and sequences in the areas of movement concepts, games, and physical fitness at the same time. It is expected that the teacher will have a particular student on several physical education programs at the same time.

Placement Testing, Baseline and Posttest Procedures

Placement testing is the initial testing procedure used. It is defined as the assessment given to a student on a series of skills or behaviors to determine the specific behaviors a student already has and those that he does not have. It is designed as a gross assessment of a student's skills and involves making a yes or no judgment. After this gross assessment, priorities of instruction are chosen in conference with the parents.

Next, a baseline procedure is used to find at what step of a specific skill teaching should begin. For each skill, baseline is defined as data collected on a behavior before teaching is initiated. This baseline forms the basis for decisions concerning future movement through the sequences.

When a behavior has been taught to the criterion level specified, a posttest is administered to determine if a student is able to maintain the skill without artificial reinforcers. A posttest is defined as the assessment given to a student after teaching is completed to insure that the behavior has been maintained.

The following are procedural guidelines of placement, baseline and posttest procedures: (See Figure 2 for a summary of these procedures.)

General Procedures for Placement

The usual procedure for placement in a particular skill area is to pinpoint as effectively as possible that point which differentiates between the student's acquired skills and deficiencies.

By dividing each area into quarters, one can begin to bracket where the student should be placed. For example, in Movement Concepts, General Space, one might begin in the middle of the section. If the student has those skills, move to the end of the section and begin working back toward the middle. If the student does not have the skills, move back to the first quarter of the section and continue moving back until you reach

	Placement Test	Baseline	Probe	Posttest	Maintenance
I. Reinforcement Procedures	Primary/ tangible or social reinforcement is presented for good behavior, i.e., attending, sitting, etc., but not specifically for a correct response.	Same as Placement Test.	Primary/tangible and/or social reinforcement is presented for a correct response.	Same as Placement Test.	Same as Placement Test.
II. Correction Procedure	No correction procedures is presented for incorrect responses.	Same as Placement Test.	Same as Placement Test.	Same as Placement Test.	Same as Placement Test.
III. Number of Trials	Present only two trials.	Each phase and/or step is presented for 2 trials.	Same as Baseline.	Same as Baseline.	Same as Baseline.
IV. Where to Begin Testing	Test only terminal phases and/or steps of program.	Baseline is begun with the most difficult phase and/or step of the program and should proceed to easier phases or steps until 2 correct responses are received at any one phase or step.	Probes are begun at the most difficult phase and/or step indicated.	Posttest occurs at the most difficult phase and/or step of the program.	Same as Posttest.

Figure 2. Testing Procedures Within Center

a point where the student can successfully complete a skill. After finding this point, test two or three skills following the successful skill to determine where to begin programming.

The testing process can frequently be expedited by gathering as much information as possible from former teachers or parents about the student's capabilities. The teacher then begins testing toward the beginning, middle, or end of a section depending on information obtained.

Once a starting point is determined, test only the terminal phase or step of the skill. Two trials are administered and both must be correct to insure that the student has the skill in his repertoire. If the student does have the skill, enter the date and "yes" in the placement column. If the student does not have the skill, enter the date and "no" in the placement column.

Cumulative Areas. In the physical education area, some sets of skills are considered to be cumulative, i.e., the acquisition of one skill is dependent upon the acquisition of the previous skill in a sequence. When placement testing, the teacher should begin at the most advanced skill. If the student responds correctly, it is not necessary to test the preceding skills. If the student, however, does not respond correctly, then the teacher should begin the bracketing approach.

Non-Cumulative Areas. When placement testing a non-cumulative area, it is necessary to test all skills at the most difficult phase. For example, if a student could do an underarm roll, we could not be assured that the student could also do an overhand throw. Therefore, both skills should be tested.

Baseline. When placement is complete, the teacher, in conjunction with the parent, identifies the skills which the student is lacking and chooses those skills to be taught. At this point, a baseline is conducted to pinpoint specifically what phases and steps within each skill the student does or does not have. Thus, an accurate place to begin teaching a particular skill is determined. Because a student may have mastered portions of a skill before training begins, it is necessary to take a complete baseline. Begin baseline with the most difficult phase and/or step of the program and proceed to easier phases or steps until two correct responses are obtained at any one phase or step in a cumulative skill or two correct responses are obtained for any one phase or step in a non-cumulative skill. This will enable the teacher to skip teaching phases and steps the student knows. See Figure 3 for an example of a baseline for kicking with the non-preferred foot. In the example, the child was unsuccessful in Phase III through IV, but was successful at Phase II. Therefore, this instructional program would begin at Phase III. When baseline is completed, record the number of steps the student already has, along with the date on the placement test.

Placement Testing Examples. Figures 4 and 5 are examples of a placement test form. For these examples, we will assume that the student being tested has not demonstrated any physical education skills in the home or classroom in the time the teacher has had to observe the student.

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: Kicking with non-preferred foot

X = Correct
O = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Baseline	IV		O	O										2/1
	III		X	O			.							
	II		X	X										
Social	III													2/4

Figure 3. Example of a Baseline Procedure

TEACHING RESEARCH PLACEMENT TEST

Physical Education

SKILL	CUE	DATE	Placement Yes / No	DATE	Baseline # Total	DATE	Posttest # Total	COMMENTS
Movement Concepts, Personal Space					/1		/1	
A. Execute Body Actions While Standing	"Do this," demonstrate action, stretch and curl.	2/11/80	Yes		/4		/4	
B. Execute Body Actions While in Prone Position	"Do this," demonstrate action, stretch and curl.	2/11/80	Yes		/4		/4	
C. Execute Body Actions While in Supine Position	"Do this," demonstrate action, stretch and curl.	2/11/80	no		/4		/4	
D. Move Body Forwards and Backwards in Space	"____, move forward and backwards."				/3		/3	
E. Move Body Up and Down in Space	"____, move up and move down."				/3		/3	
F. Move Body Sideways	"____, move left and move right."	2/11/80	no		/3		/3	
					/1		/1	
					/1		/1	
					/1		/1	
G. Move Arms Forwards and Backwards in Space	"Move both arms forwards and backwards."	2/11/80	Yes		/5		/5	
H. Move Arms Up and Down in Space	"Move both arms up and down."	2/11/80	Yes		/5		/5	
I. Move Arms Sideways in Space	"Move both arms to the side away from the body."	2/11/80	no		/3		/3	
J. Move Body In Front Of and Behind Object in Space	"Move in front of the chair." Response, repeat.				/12		/12	
K. Move Body Over and Under in Space	"Move over the table and under the table."				/3		/3	
L. Move Body Forwards and Backwards Around Objects	"Back around the chair and walk around the chair."	2/11/80	no		/3		/3	
M. Move Body Through Objects in Space	"Move through the hoop forwards, backwards and sideways."				/13		/13	
N. Demonstrate 3 part body movement sequence in various directions in space	"Move sideways to the left, right, and left."				/3		/3	
					/1		/1	
					/1		/1	

Figure 4

TEACHING RESEARCH PLACEMENT TEST

Physical Education

SKILL	CUE	DATE	Placement Yes / No	DATE	Baseline # Total	DATE	Posttest # Total	COMMENTS
Movement Concepts, General Space					/		/	
A. Demonstrate awareness of space by moving inside shapes on floor	"Move around inside the rectangle."	2/9/80	no		/16		/16	
B. Demonstrate awareness of space by moving outside shapes on floor	"Move around outside the rectangle."				/16		/16	
C. Demonstrate awareness of space by moving on shapes on floor	"Move around the rectangle on the line."	2/9/80	no		/16		/16	
D. Demonstrate awareness of shapes/ boundaries by moving within 5' area	"Move around the objects following the line."				/11		/11	
					/		/	
					/		/	
Game Skills, Basic					/		/	
A. Underhand roll	"Roll the ball underhand at the target."	2/9/80	no		/9		/9	
B. Underhand throw	"Throw the ball underhand at the target."	2/9/80	no		/7		/7	
C. Overhand throw	"Throw the ball overhand at the target."	2/9/80	yes		/7		/7	
D. Underhand Strike	"Hit the ball underhand."				/8		/8	
E. Overhand Strike	"Hit the ball overhand."				/9		/9	
F. Kicking with the toe, preferred foot	"Kick the ball."				/7		/7	
G. Kicking with the instep, preferred foot	"Kick the ball."				/7		/7	
H. Kicking with the side of the foot, preferred foot	"Kick the ball."				/7		/7	
I. Kicking with the toe, non-preferred foot	"Kick the ball (touch foot) with this foot."				/7		/7	
J. Kicking with instep, non-preferred foot	"Kick the ball (touch instep) with this foot."				/7		/7	
K. Kicking with the side of foot, non-preferred foot	"Kick the ball (touch side of foot) with this foot."				/7		/7	

Figure 5

In Figure 4, the teacher begins by testing Skills F and L. The student cannot do either of these skills and so the teacher dates and writes "no" in the placement column and brackets back to Skills C and I. The student cannot do these easily and so the teacher dates and records "no" and then tests Skills A and G. The student can do these skills so the teacher dates and records "yes" and moves ahead to Skills B and H which the student is able to accomplish. This is recorded "yes". The two skills the student is able to demonstrate, Skills A and B, and G and H are dated and the number of steps is recorded in the posttest column.

In Figure 5, the teacher tests Skill C, Movement Concepts, General Space and finds that the student cannot do this skill. The teacher then moves to Skill A in Movement Concepts, General Space and discovers that the student also cannot perform this skill. At this point, no additional placement testing would need to be conducted in this area of the curriculum. In the future, a baseline will be conducted to determine at what phase and step of Skill A instruction should begin.

Some of the skills in the Game, Exercise and Leisure Sport Curriculum are not cumulative. For example, in Figure 5, the Basic Game Skills will each need to be tested to determine an accurate placement for the child. As indicated in the example, the student cannot do Games Skills, Basic A and B, the underhand roll and underhand throw, but is able to successfully perform Skill C, an overhand throw.

Posttest. After a skill is completed, a posttest is given to be sure the behavior has been learned in its entirety. Test the most difficult phase and step in a cumulative skill and all phases and steps for a non-cumulative skill. If testing is completed successfully, record the date and total steps for the skill in the posttest column of placement test and add to maintenance file if necessary. If testing is not completed successfully, probe missed steps to determine where to begin teaching or to determine if the reinforcer needs to be faded more slowly.

Reinforcement Procedures. The procedures for reinforcement during a placement test, baseline, and posttest are the same. Primary tangible and/or social reinforcers are delivered throughout the placement test contingent upon appropriate behaviors such as attending to a task, maintaining eye contact, waiting patiently, following commands not related to the task being tested ("Come here, sit down, give me the toy"), etc. Reinforcers are not delivered contingent upon correct performance on the specific test items. The rationale for this procedure is that delivery of reinforcers contingent upon correct performance constitutes treatment or teaching. On the other hand, the placement, baseline (pretest) and posttests constitute evaluation of the student's performance prior to or after treatment. During these tests, however, reinforcers are delivered in order to maintain those behaviors (attention to task, sitting, waiting, etc.) necessary for a smooth and pleasant testing situation, and to keep the student motivated to continue attempting new tasks.

The frequency with which reinforcers are delivered is individual to each student. Profoundly handicapped students may require primary and

social reinforcement at a high rate (every 15 seconds) while the moderately handicapped adolescent may work for the entire placement test session given only periodic social praise and a free time break after 30 minutes as a reward. Again, the teacher can determine the frequency of reinforcement through information gathered from parents, former teachers and through her own informal observations prior to the placement test.

Individual Education Program (IEP). After the teacher has accomplished the placement testing of the student, the student's Individual Education Program (IEP) is developed with the parents and appropriate school personnel. The IEP with its long and short-range goals provides the basis for the programs which are eventually placed on the clipboard. An example of a student's physical education IEP is shown in Figure 6.

Summary

This chapter provides a description of the Game, Exercise and Leisure Sport Curriculum, placement procedures in that curriculum, and the development of the physical education IEP.

FORM I

Teaching Research Infant and Child Center

Individual Education Program

Name Jim

Priority	Long Range Objectives
1.	Jim will throw a ball with an overhand motion.
2.	Jim will catch a ball.
3.	Jim will kick a ball with the toe.
4.	Jim will run 300 yards without stopping
5.	
6.	
7.	
8.	
9.	
10.	

I have examined my child's individual education program, including the priority of long range objectives, short range objectives for each long range objective as shown in the attached sheets, and baseline and progress data. I understand that the methods used to teach my child are documented in A Data Based Gymnasium for the Moderately and Severely Handicapped.

Date _____ Signature _____

_____ _____

_____ _____

Figure 6. Individual Education Plan

Teaching Research Infant and Child Center Individual Educational Plan

Priority # 1 Long Range Goal: _____ will increase and/or develop his/her skills in the area of _____.

Short Range Objectives	Home	1:1	Group	Baseline		Review		Review		Revisions		Maintenance		Comments
				Date	Data	Date	Data	Date	Data	Date	Change	Date	Status	
1. Bring the arm backward and then forward releasing the ball in the direction of the target with teacher assistance.														
2. Throw the ball overhand in the direction of a target 5' away.														
3. Throw the ball overhand with one foot in front of the other (opposition) at a target 10' away.														
4. Throw the ball overhand for fifteen feet while stepping with the opposite foot.														
5.														
6.														

I have examined my child's individual educational plan including the priorities of long range goals, short range objectives. In reviewing the plan I have also examined the baseline and progress data. I understand that the methods used to teach my child are documented in A Data Based Gymnasium for the Moderately and Severely Handicapped.

Date _____ Signature _____

Date _____ Signature _____

Date _____ Signature _____

Figure 6 continued

Teaching Research Infant and Child Center Individual Educational Plan

Priority # 2 Long Range Goal: _____ will increase and/or develop his/her skills in the area of _____.

Short Range Objectives	Home	1:1	Group	Baseline		Review		Review		Revisions		Maintenance		Comments
				Date	Data	Date	Data	Date	Data	Date	Change	Date	Status	
1. Jim will catch an 8" ball thrown from 2' away with teacher assistance.														
2. Jim will catch an 8" ball thrown from a distance of 4 feet.														
3. Jim will catch a tennis ball thrown from a distance of four feet.														
4. Jim will catch a tennis ball thrown from a distance of 8' within a one stride distance to Jim's left on right.														
5.														
6.														

I have examined my child's individual educational plan including the priorities of long range goals, short range objectives. In reviewing the plan I have also examined the baseline and progress data. I understand that the methods used to teach my child are documented in A Data Based Gymnasium for the Moderately and Severely Handicapped.

Date _____ Signature _____

Date _____ Signature _____

Date _____ Signature _____

Figure 6 continued

Teaching Research Infant and Child Center Individual Educational Plan

Priority # 3 Long Range Goal: _____ will increase and/or develop his/her skills in the area of _____.

Short Range Objectives	Home	1:1	Group	Baseline		Review		Review		Revisions		Maintenance		Comments
				Date	Data	Date	Data	Date	Data	Date	Change	Date	Status	
1. Jim will kick a ball five feet with the toe with teacher assistance.														
2. Jim will kick a ball ten feet with the toe with teacher prompting.														
3. Jim will kick a ball with the toe ten feet.														
4. Jim will kick a ball with the toe twenty feet to a target.														
5.														
6.														

I have examined my child's individual educational plan including the priorities of long range goals, short range objectives. In reviewing the plan I have also examined the baseline and progress data. I understand that the methods used to teach my child are documented in A Data Based Gymnasium for the Moderately and Severely Handicapped.

Date	Signature
_____	_____
_____	_____
_____	_____

Figure 6 continued

Teaching Research Infant and Child Center Individual Educational Plan

Priority # 4 Long Range Goal: _____ will increase and/or develop his/her skills in the area of _____.

Short Range Objectives	Home	1:1	Group	Baseline		Review		Review		Revisions		Maintenance		Comments
				Date	Data	Date	Data	Date	Data	Date	Change	Date	Status	
1. Jim will walk 100 yards without stopping.														
2. Jim will run 25 yards without stopping.														
3. Jim will run 50 yards without stopping.														
4. Jim will run 100 yards without stopping														
5. Jim will run 200 yards without stopping														
6. Jim will run 300 yards without stopping														

I have examined my child's individual educational plan including the priorities of long range goals, short range objectives. In reviewing the plan I have also examined the baseline and progress data. I understand that the methods used to teach my child are documented in A Data Based Gymnasium for the Moderately and Severely Handicapped.

Date	Signature
_____	_____
_____	_____
_____	_____

Figure 6 continued

References

Fredericks, H. D., et al. The Teaching Research Curriculum for the Moderately and Severely Handicapped. 2nd Edition. Springfield Illinois: Charles C. Thomas, 1980.

Fredericks, H. D., et al. The Teaching Research Upper Level Curriculum for Moderately and Severely Handicapped (in press).

Chapter 6

KEEPING TRACK OF STUDENT'S PROGRESS

Data -- The Essence of Individual Programming

In order to provide efficient individual programming, a teacher must be able to measure accurately the skills and capabilities which a student possesses in all curricular areas. The teacher must further be able to track the student's progress through the curricular areas.

Implied in this tracking procedure is the necessity to respond to the data collected. For instance, if a teacher is instructing a student in a particular physical education program and the data which are being gathered about the student's progress indicate that no progress has been made for the past two days, the teacher is required under the system described in this book to modify that student's program by either reducing the complexity of the task, increasing the power of the reinforcer, or by modifying the way in which the materials are presented to the student.

On the other hand, if the student is moving through the steps of a sequence at a rapid rate with few incorrect responses, the teacher should probe ahead to determine whether the student possesses more advanced skills which would allow him to move through that sequence more rapidly or to skip portions of the instructional sequence.

Thus, in both instances the data are telling the teacher to alter the student's program. This ability to respond to the data and to modify programs accordingly is the essence of individual programming. Therefore, to function effectively in this system, teachers must be able to make as accurate an initial assessment as possible on the capabilities of the student, place the student in the scope and sequence of the curriculum and maintain data on student progress so as to modify programs when needed.

In addition, the teacher must be prepared to inaugurate programs to change and measure social behaviors which are interfering with the learning process--tantrumming, crying, aggressive behavior, non-compliance, etc.

Chapter 5 discussed the initial assessment of a student in the curriculum; Chapter 3 discussed the assessment of students in social programs. This chapter is devoted to those elements of keeping track of a student's progress in the acquisition of skills after the initial assessment.

Tracking Skill Acquisition Programs

After the initial assessment has been made in a curricular area, the teacher is ready to commence the student's instructional program. This of course assumes that there are no social behaviors which will interfere with the instructional program and prevent learning from occurring. If there are such behaviors, they should be treated first.

Let us review an example of a student who does not have such behaviors, and who has been placed in a program for kicking with the preferred foot. The phases and steps that the student will go through are shown in Figure 1. The program is to be conducted daily and is described on a program cover sheet, Figure 2.

Updating

All data for the acquisition of skills are recorded after each trial. It is believed that this insures the most efficient teaching. A moderately or severely handicapped student, by the nature of his handicap, will be retarded in the acquisition of many skills. As educators of this student, we have a responsibility to do everything we can to offset the effects of his handicap by providing him with as many skills as possible through our teaching. Moreover, we cannot afford to waste effort in our teaching or to be inefficient.

If we do not help the student to learn at his optimum growth rate, we are in fact further contributing to his retardation. The purpose of the continuous data system therefore is to give us immediate (daily) feedback so that we can modify our teaching in a timely fashion so as to optimize the rate of learning of the student.

Thus, data are examined daily, usually after instruction hours, to determine if a change in a program is necessary. This process of examination of data, decisions about change, and recording the program for the next day is called updating.

There are six possible major decisions which a teacher may make about a program during this updating process:

1) Maintain the program as is.

2) Probe ahead to determine if the student can perform at a more advanced step of the program.

3) Change the reinforcer being used with the program.

4) Branch the program to add additional steps in the program which will either make the task easier or will provide additional support to the student while performing the task.

5) Probe backward to determine that the student has mastered previous steps.

6) Temporarily cancel the program.

The data pattern plus knowledge about the student's previous performance dictates which of the above decisions the teacher will make during the updating process. A discussion of each follows:

Maintain the Program. If a student is progressing satisfactorily in a program, the teacher will decide to continue that program as is during the next class day. A number of data patterns for a particular program

F. Kicking With the Toe, Preferred Foot

Terminal Objective: Student, from a standing position, will perform a kick by swinging the preferred leg backwards and then forwards striking the ball with the toe of the foot, causing the ball to roll in the direction of a target placed 20 feet away.

Prerequisite Skills: Fine Motor Skills/Lower Extremity, Skill K

Phase I	Student, from a standing position, will perform a kick by swinging the preferred leg backwards and then forwards, striking the ball with the toe of the foot, causing the ball to roll in the direction of a target placed five feet away. The teacher will assist the student by placing her hand on his preferred leg and pushing his leg backwards and then forwards causing it to strike the ball at the toe of the foot.
Phase II	Student, from a standing position, will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed five feet away. The teacher will assist the student by placing her hand on the student's preferred leg, and forcing the leg backward and prompting it forward, allowing the leg to strike the ball on the toe of the foot.
Phase III	Student, from a standing position, will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed five feet away. The teacher will assist the student by placing her hand on the preferred leg and forcing the leg backward, allowing the leg to come forward and striking the ball on the toe.
Phase IV	Student, from standing position will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed five feet away. The teacher will assist the student by placing her hand on the student's preferred leg and prompting the foot backward, allowing the leg to then come forward and strike the ball on the toe of the foot.
Phase V	Student, from a standing position, will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed 20 feet away.

Figure 1

F. Kicking With the Toe, Preferred Foot, Continued.

The following steps apply to Phase V.

Steps:

1. 10'
2. 15'
3. 20'

Suggested Materials: An 8" diameter ball

Figure 1, Continued

Pupil: Johnny Date Started: 3/3 Date Completed:	Program: Kicking with Preferred Foot
Verbal Cue: "Johnny, watch me. (Teacher demonstrate) Kick the ball at the target."	Materials: Ball 10" to 12" in diameter area 20' long
Non-Verbal Cue: Teacher demonstrate. Place ball in front of child. Point to the target.	Reinforcement Procedure: 1:1
Correction: "No, Johnny. Kick the ball at the target." Physically assist and socially reinforce.	Criterion: Three consecutive correct responses

Figure 2. Program Cover Sheet

will elicit this decision. Figure 3 shows a pattern where the student had reached criterion (three consecutive correct responses) for a step in the program. The update for that program is merely designating the next step in the program. This is shown for 2/6 (February 6) in Figure 4. Notice that the teacher has not specified the reinforcer to be used for the next day. This lack of specification means that the volunteer has the option of selecting a reinforcer from the student's consequence file.

Figure 5 presents a different data pattern. It is obvious from this pattern that the student has had intermittent success throughout the day 2/5. Since she has been working on this step of the program for only one day, the decision of the teacher is to maintain the program for another day. The updating decision as recorded on the data sheet appears in Figure 6. Again, there is no need at this time to specify the reinforcer.

Probe Ahead. Students occasionally progress through programs at a much faster pace than we expect. This rapid progress usually occurs for one of two reasons: 1) the student was initially assessed erroneously in the program; 2) after the student has acquired the initial steps of a program, the remaining steps which are extensions of the initial steps are more easily acquired by some students. A pattern of data indicating this phenomenon appears as Figure 7. The student has progressed through steps 3, 4, and 5 with only one error. Therefore, the decision of the teacher is to probe ahead. A probe of this nature presents two trials, using the same reinforcers and schedule as during other programming. This decision is reflected in the data sheet shown as Figure 8. If on 2/7 the student succeeded in both trials at all three steps and the program had additional phases, the updating decision on 2/7 would be to probe the terminal step of the remaining phases of the program.

Change the Reinforcer. Figure 9 shows data for a two-day period during which the student has been exhibiting intermittent success. This type of pattern indicates that the behavior is within the capability of the student but that the student perhaps needs a greater incentive to emit the behavior consistently. Therefore, the pattern suggests a designation of a reinforcer that is known to be more powerful for the student. That decision is reflected in Figure 10. In this case, raisins are designated by the teacher to be used as reinforcers during the next day's teaching. Thus, the volunteer is not permitted to choose the reinforcer.

Branch the Program. Figure 11 presents a situation where the student is not succeeding within a program, nor is the evidence sufficient to demonstrate that a behavior is in a student's repertoire of behaviors. This type of pattern probably indicates that the program should be branched. Branching a program means adding additional steps to the sequence of behaviors to be taught. These additional steps are designated on the behavioral sequence sheet by subletters added to the phase or step. Branching can usually occur in one of three ways:

1) Adding steps to make the behavior smaller. For instance, if Step 3 of a motor sequence required a student to hold a position for 5 seconds and Step 4 required the student to hold that position for 10 seconds, and the student was able to accomplish Step 3 but not Step 4, a branch might be indicated. The branch could reduce the size of the requirement by adding steps as follows:

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Raisin/ Social	IV	3	0	X	0	X	X	X						2/5

Figure 3. Data Pattern for Maintaining Program

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
O = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Raisin/ Social	IV	3	O	X	O	X	X	X						2/5
	IV	4												2/6

Figure 4. Update for Data Pattern in Figure 3

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
O = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Raisin/ Social	IV	2	O	X	O	O	O	X	O	X	X	X		2/4
Raisin/ Social	IV	3	O	X	O	X	X	O	X	O	X	O		2/5

Figure 5. Data Pattern for Maintaining Program

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
O = incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Raisin/ Social	IV	2	O	X	O	O	O	X	O	X	X	X		2/4
Raisin/ Social	IV	3	O	X	O	X	X	O	X	O	X	O		2/5
	IV	3												2/6

Figure 6. Update for Data Pattern in Figure 5

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Social	IV	1	0	0	X	0	X	0	X	X	X			2/4
Social	IV	2	0	X	0	X	X	X						2/5
	IV	3	X	0	X	X	X							
Social	IV	4	X	X	X									2/6
Social	IV	5	X	X	X									

Figure 7. Pattern of Data Suggesting a Probe Ahead

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Social	IV	1	0	0	X	0	X	0	X	X	X			2/4
Social	IV	2	0	X	0	X	X	X						2/5
	IV	3	X	0	X	X	X							
Social	IV	4	X	X	X									2/6
Social	IV	5	X	X	X									
Probe	IV	8-6	8 /	7 /	6 /									2/7

Figure 8. Updating Showing Decision to Probe Ahead

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Social	II	2	X	0	X	X	0	X	0	0	X	0		2/4
Music Box/ Social	II	2	0	0	X	X	0	0	X	0	X	X		2/5

Figure 9. Pattern of Data Showing Intermittent Success and Suggesting a Change of Reinforcer

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Social	II	2	x	0	x	x	0	x	0	0	x	0		2/4
Music Box/ Social	II	2	0	0	x	x	0	0	x	0	x	x		2/5
Raisin/ Social	II	2												

Figure 10. Updating Showing Decision of Teacher to Change Reinforcer

Teaching Research Infant and Child Center Raw Data Sheet

Name:_____ Program:_____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Raisin/ Social	1	2	0	0	0	X	0	0	0	0	0	0		2/5
Raisin/ Social	1	2	0	0	0	0	0	0	0	0	0	0		

Figure 11. Pattern of Data Indicating Necessity for Branch

Original Sequence	Branch
3. 5 seconds	3a. 6 seconds
4. 10 seconds	3b. 7 seconds
	3c. 8 seconds
	3d. 9 seconds

2) Adding additional cues by providing additional non-verbal support. For instance, a student is in a kicking with preferred foot program and is at Phase 1, Step 1 which is:

1. Student will move the ball with the foot while standing.

Step 1: Trainer delivers verbal and signed cue and assistance.

The student successfully accomplishes that program which has been conducted by providing a strong push on the student's legs. However, at Phase 1, Step 2, the data resemble those which appear in Figure 11, Phase 1, Step 2 as follows:

Phase 1. Student will move the ball with the foot while standing.

Step 1. Trainer delivers verbal and signed cue and a demonstration.

The teacher decides to branch the program and so writes the branch which would appear on the behavior sequence sheet as follows:

2a. Push the foot at calf with verbal and signed cue
2b. Touch the foot at calf with verbal and signed cue
2c. Touch the student at thigh with verbal and signed cue

Branches can appear as not only physical assists but can also be variations of verbal cues or combinations of the two.

In a branch such as those described above, the updating that is accomplished on the clipboard requires entries in two places. First, the behavioral sequence sheet needs to be modified by writing in the necessary additional steps. The volunteer who is going to teach the program is cued to refer to the behavioral sequence sheet by the second entry, that on the data sheet, which is shown in Figure 12. The subletter added to the step indicates that the program has been branched.

Another consideration of the teacher when branching is that the reinforcer to be used should be the most powerful available for the student. Although the data pattern may indicate branching, these patterns can only be considered as clues to efficient programming. They are not fool-proof indicators. Therefore, prudence would dictate that a teacher, faced with data indicating poor or no performance, would prior to branching the program, indicate the more powerful reinforcer to be used.

There is one other type of branching which must be considered. Frequently, certain materials are used with programs and the teacher may determine that other materials may be more suitable for conducting the pro-

Teaching Research Infant and Child Center Raw Data Sheet

Name: _____ Program: _____

X = Correct
0 = Incorrect

Reinforcer	Phase	Step	Trials 1	2	3	4	5	6	7	8	9	10	Comments	Date
Raisins/ Social	1	2	0	0	0	X	0	0	0	0	0	0		2/5
Raisins/ Social	1	2	0	0	0	0	0	0	0	0	0	0		2/6
Raisins/ Social	1	2a												2/7

Figure 12. Updating Showing Decision to Branch a Program

gram with a particular student. Therefore, the teacher may choose to revise the program based on the new materials. This may require nothing more than a notation on the individual cover sheet, but it might also require changing the behavioral sequence sheet The teacher may also change the type of verbal or visual cue being presented to the student.

Probe Backward. When faced with the possibility of branching, there are certain considerations which the teacher must make. There is the possibility that the poor performance of the student may be due to erroneous data at the previous step. Therefore, the teacher should designate that the previous step be probed to insure that the student is able to accomplish it. If the student can demonstrate in the probe that he can perform the previous step, then the branching technique is warranted. If he cannot, he will have to be placed in the program where he can accomplish the step.

There may be a reason other than erroneous data for a student being unable to perform the previous step of the program. The criterion level for moving to the next step may be set too low for overlearning to occur and the student may therefore "forget" the skill he learned on the previous day. If this phenomenon occurs more than once in a particular curricular area, the criterion for moving to the next step should be raised. For instance, if the criterion has been three consecutive responses before moving to the next step, it probably should be raised to five consecutive responses. This type of updating requires a change on the individual program sheet.

Temporarily Cancel the Program. If a program is not succeeding and the teacher has used all the most powerful reinforcers known and has branched the program in as many ways as can be determined, the program should not be continued. This cancelling of a program is an appropriate educational decision since the teacher has exhausted the modifications for a particular program. To keep the student in the program at that point would only maintain the student in a failure situation. Therefore, it is better to temporarily cancel the program, place the student in another program, and return to the cancelled program at a future time.

Maintenance System

Among skill acquisition programs, there are two types of skills -- cumulative and discrete. A cumulative skill is one upon which another skill is built. For instance, trapping a ball is a skill which is usually acquired before catching a ball. Catching a ball is considered to encompass the skill of trapping. Therefore, after a student exhibits that she can catch a ball, there is no need to probe to determine that she has maintained the ability to trap a ball.

However, certain skills are discrete. The vast majority of these are the terminal objectives of cumulative skills. Catching a ball is such a skill. Unless the student is engaging in a sport that allows continuous practice with such a skill, the proficiency in the skill can decrease and must be periodically probed to determine if additional practice or instruction is necessary to maintain the skill. In these cases, the

skill seldom disappears but the performance level may decrease. In catching a ball or hitting a ball with any type of bat, club or racquet, the number of misses may have increased with lack of practice. Skills that require stamina, strength, or speed may also have diminished and may also have to be probed to determine the level of maintenance.

The form on which that maintenance check is recorded is shown as Figure 13. Therefore, a maintenance file is established. Figure 13 shows a partially completed maintenance file.

Two trials are run with data entered in available spaces. If one trial is correct and one trial is incorrect, a third trial is run and data entered in the shaded space.

The first probe is run two weeks after completion of the program. Second and third probes are run at one-month intervals. The fourth probe is run three months later with the fifth and sixth probes being run in six-month intervals. If the data reflects the skill is maintained to this point, it is considered part of the student's repertoire.

The program sheets for programs on maintenance are on one clipboard for volunteer use. The volunteer is to pull this sheet, which is listed in alphabetical order, before running the program. It will provide any additional information which is not included on the maintenance file sheet.

At the end of the week when the percentage gains form is completed, a check is made to assure that a probe date has not been missed. If it has, a new date is entered on the file sheet and a note made for staff to make sure the second date is not missed.

Summary

This chapter has described ways of tracking a student's performance in the acquisition of a skill. It describes ways in which these can be analyzed and educational decisions made about the student's program. Methods of tracking maintenance of learned skills are also delineated.

Child's Name Mary

MAINTENANCE FILE

PROGRAM: Catches Ball

Terminal Objective: Child catches ball at 20'

Cue: "Catch the ball".

Date program completed: October 5, 1976

Dates to be probed: October 19, 1976
November 19, 1976
December 19, 1976
March 19, 1977
September 19, 1977
March 19, 1978

X	X	
X	X	
X	0	
X	X	
X	X	

PROGRAM Runs 440 yard

Terminal Objective: 440 yards in 180 seconds

Cue: "Run"

Date program completed: August 7, 1977

Dates to be Probed: August 21, 1977
September 21, 1977

X	X	

PROGRAM

Terminal Objective:

Cue:

Date Program completed:

Dates to be Probed:

Figure 13

Chapter 7

VOLUNTEERS: TRAINING AND USE

Need for Volunteers

The means of providing individual physical education programs is usually not difficult for higher functioning students. Many individualized basic game skills or physical fitness activities can use a self-recording technique to assist the student to achieve weekly goals. However, with more severely handicapped or younger students, the problem of individual programming becomes not only one of structuring activities in sequence but of providing a one-to-one teacher/pupil relationship. In these instances, the use of aides and volunteers is almost mandatory.

Although assistance may be provided by a paid aide, the inclusion of that person alone does not allow for extensive individualized instruction and generally, additional volunteer assistance is needed.

Another reason for including volunteers in the classroom stems from the study conducted by Fredericks, et al (1977) which identified indicators of competencies of teachers of the severely handicapped. The primary indicator was the ability of the teacher to maximize instructional time. One of the methods of maximizing this time by teachers whose students were making high gains was through the use of volunteers to conduct instruction in the classroom.

In discussing the use of volunteers with a teacher, it is not uncommon to hear, "But I wouldn't know what to do with them" or "They are more trouble than they are worth", or "I don't have the time to train them and they really get in my way." On the other hand, when interviewing volunteers who have been utilized in programs for handicapped students, the volunteers lament: "I stayed around and didn't do anything all day long", "All I did was change diapers and clean up messes. I would like to do something more constructive than that", "The teacher didn't give me adequate instructions on how to do the task he wanted me to do and became annoyed when I didn't do it properly."

One final question most often asked by teachers who are contemplating the use of volunteers is "Where do I find them?" The availability of volunteers is quite good in most communities and is limited only by the teacher's imagination. Volunteers can be recruited from a number of sources: community organizations (Jaycee's, Women's clubs), foster grandparent organizations, high schools, grade schools, P.T.A. and colleges to name just a few. Usually a phone call and later a personal visit by yourself to one of their group meetings will be necessary. In schools, of course, one must first approach the school's principal. After this support is obtained, usually a presentation to the student body or to individual classes is made to recruit volunteers. In general, the presentation should describe the types of students that the volunteers will be working with and what the volunteer will be doing. For those who have handicapped and non-handicapped students in the same class, the non-handicapped students can be used as vol-

unteers, rotating your volunteers at least every 5-10 minutes to assure that one student volunteer does not become overly consumed by her task.

Rules for Use of Volunteers

Evidently, the utilization of volunteers in the gymnasium can often become a source of displeasure not only for the teacher but for the volunteer. Nevertheless, volunteers can be used effectively with a minimum of friction if we follow certain principles, which we might call "Rules for the Use of Volunteers." These are:

1. Time must be taken to train volunteers.
2. Volunteers must be given teaching tasks in the classroom comparable to their level of training.
3. A system of feedback as to the adequacy of the volunteer's performance must exist.
4. A simplified system of communication not requiring verbal interaction between the teacher and the volunteer must exist.
5. A system of flexible scheduling of volunteers must be maintained.

Classrooms for the moderately and severely handicapped at Teaching Research have developed techniques for the training and use of volunteers, following the above rules. Therefore, let us examine each of these rules in more depth.

1. Time must be taken to train volunteers.

Because volunteers are donating time which is somewhat limited, the amount of available training time is also limited. Therefore, a concise and simple method for training volunteers must be followed. An initial orientation presentation is necessary and should consist of an explanation and demonstration of the role a volunteer is to play in the gymnasium. The presentation should also provide the essentials of behavior modification as required for operating in the gymnasium. Following this presentation, there should be a supervised practicum which affords further opportunity for the volunteer to develop his skills.

Once completed, a volunteer should be able to demonstrate the following:

a. Knowledge of the terminology and principles of behavior modification.
b. The ability to consequate students appropriately.
c. The ability to cue students appropriately in a learning situation.
d. Knowledge of shaping procedures.
e. Knowledge of forward and reverse chaining.
f. The ability to keep records.

The new volunteer is expected to exhibit skills in three major areas of student interaction, i.e., proper use of cues, proper use of consequences, and appropriate data keeping. Additionally, the volunteer must demonstrate a knowledge of the principles of reinforcement, shaping and

chaining.

Later, as the volunteer becomes more proficient, additional skills can be taught. The following skills can be designated as learning objectives for more experienced volunteers.

a. Demonstrate ability to analyze a task, i.e., take complex behaviors and divide them into the smaller behaviors which comprise them.
b. Revise program as necessary based on data gathered.
c. Assist teacher in supervision and training of other volunteers and parents.
d. Implement and monitor group activities with a small group of students.

During the initial orientation and lecture, the following points are discussed:

1. The role of the volunteer
2. Overview of the clipboard
3. The analysis of behavior and the methods used to break complex behaviors into smaller steps
4. Appropriate cueing
5. Various types of reinforcement, the necessity for immediate reinforcement, and the principles of pairing social reinforcement with primary reinforcement. Various types of tangible reinforcers are discussed and described.
6. Correction procedure
7. Chaining of behaviors, to include both forward and reverse chaining
8. The necessity for record keeping, not for the sake of gathering data for research purposes, but for decision-making purposes to revise programs. Various ways to record data are described.

The demonstration portion of this initial orientation session can be conducted by using video tapes or slides. Video tapes of other volunteers working with children or of the instructor working with children are played and replayed to demonstrate and illustrate points. Video tapes are considered a more effective form of demonstration than the use of live models. The interaction of instructor and live pupils cannot be replayed so as to emphasize or clarify a point with the pupil. The use of a live pupil does not always allow the demonstration of principles which are thought necessary to be included in the instruction. Therefore, video tapes are considered more suitable for the type of concentrated instruction described here.

It should be emphasized that the instruction is simplistic. Schedules of reinforcement or other sophisticated ramifications of behavior modification are deliberately excluded. If the volunteer understands the basic principles of how to present material to a student, how to consequate the student's responses, and then subsequently how to shape and chain responses, such knowledge should be sufficient for the volunteer to perform adequately, provided she works under the supervision of a fully qualified teacher.

The initial orientation session described above consists of only a brief lecture and demonstration; it must therefore be considered nothing more than an introduction to how the students are taught in the gymnasium and the learning theory being used. The most important part of the training certainly is in the actual practice which the volunteer receives, the observations which the teacher will make of the volunteer, and the feedback which the teacher will provide the volunteer following the observation.

Since so much importance is placed on the observation of the volunteer, a systematic observation procedure is used. It is recognized that there are many such observation procedures in existence. The one described here has served adequately in a number of different settings and with a wide variety of students.

Essentially, there are three major elements in observing the effectiveness of the volunteer with the student. The first is the preparation and utilization of cues and materials; the second is the utilization of consequences by the volunteer; and the third is the volunteer's ability to record whether the responses of the student are correct or incorrect.

The volunteer should be placed in a teaching situation with a student and instructed in the utilization of cues, materials and reinforcers for the program to be taught. The teacher should demonstrate how the lesson is to be taught; the volunteer should then model the teacher in conducting the lesson. When the volunteer first starts with a student, it is recommended that a reinforcer be identified for the student which has proven to be powerful. This will help to assure that the volunteer will have a successful first experience working with a handicapped child.

Cue Preparation and Utilization

The first element of observation which is made when training volunteers examines how the volunteer prepares for the lessons to be taught and how that lesson is presented to the student. We call this cue preparation and presentation.

Cue preparation includes insuring that all materials necessary to teach the lesson are available and are placed in the most convenient format or position for the teaching of the lesson. It includes the positioning of the data sheet so that the recording process can be facilitated. Once a lesson begins, it should not be interrupted because a volunteer "forgot" some necessary items or materials.

The student's physical deficits must also be considered in cue preparation. What prosthetic or sensory aids need to be provided? As part of the cue preparation, we must consider if the student is wearing the eye glasses he is supposed to be wearing. Does he have his hearing aide on? Is it tuned properly? Does he have on the braces that he needs? All of these things must be checked before the lesson begins and are part of the cue preparation.

Proper cue presentation is very important for the severely handicapped student. There are a number of considerations relative to proper cue presentation. First, attention must be paid to the sensory deficit which some handicapped students possess. If the student is deaf, blind, or both, the manner in which the cue is presented must be modified to accommodate that student. For the student who is deaf, a total communication approach using both signs and verbalizations may comprise the cue. For the blind student, the instructor may have to lead the student through the steps and shape her performance or shape her imitations by touch or a tactile approach. The student who has a physical handicap presents other problems, especially in the physical education area. If we say to a physically handicapped student, "Do this", wanting him to imitate us, we must provide him something which is within his physical capability.

Another dimension of cue presentation is consistency. To the student who is severely handicapped, consistency of cue presentation is absolutely mandatory. For instance, for the severely retarded student, the command "Come here" may sound very different from the command "Come on over here"; consequently, one or the other, and preferably the more simple, would be chosen as the consistent command. Instructions in any task have to be consistent, and the amount of consistency necessary is directly related to the severity of the handicap, especially if that handicap is retardation.

Cue presentation becomes very important in any of these activities which are chained or reverse chained. The task must be presented to the student at the student's present learning stage within that chain. The following example illustrates this.

Suppose the student is learning to strike a ball using a volley ball type swing. She is at a stage where she strikes the ball independently but with the teacher's hand placed at the student's elbow which supports the ball. The volunteer must know that the student is to conduct the task independently with a support hand on the student's elbow and provide the command "Strike the ball." However, in preparation for the task, the volunteer may ask "Do I help the student to do it independently providing the assistance at the point where the student strikes the ball?" These decisions can't be left up to the volunteer and must be a part of the cue and program instructions for the volunteer. Without them, the student will be confronted with many inconsistencies in cue presentation which greatly impede the learning process.

Figure 1 shows the volunteer observation form. Before the program is conducted, the identifying information at the top of the form is completed. "Trainee" is the person (volunteer) conducting the program. "Observer" is the name of the person observing the program. "Program" is as stated on the Program Cover Sheet. "Student" is the individual who is learning the program. "Date" and "Time" entries are also made.

In addition, prior to observing the program, the volunteer is asked to supply the information shown in the center of the form, labeled as "Cover Sheet Information." The "cue" is stated on the program cover sheet and should include both verbal and non-verbal cues. The "behavior" is de-

Teaching Research Infant and Child Center
VOLUNTEER OBSERVATION FORM

Volunteer: _____ Date: _____ Correction Procedure: _____

Student: _____ Program: _____ Criterion: _____

Observer: _____ Cue (Verbal): _____ Behavior (Phase/Step): _____

Time: _____ to _____ Cue (Non-Verbal): _____ Reinforcers: _____

Student Hand Preference: _____

	YES	NO
1. Volunteer has correct materials		
2. Materials, volunteer and data sheet in best position for presentation		
3. Student in correct position		
4. Student's hearing aid is checked for correct setting before session begins.		

CUES					CONSEQUENCES													DATA	
					Positive Reinforcers						Correction Procedures & Punishers							Recorded	
Appropriate	No Cue	Weak	Change Wording	Repeated	Appropriate	No Reinforcer	Fail To Pair	Weak	Delayed (2 sec)	Inappropriate	Appropriate	No Correction/ Punisher	Delayed	Inapprop.	No Cue	Help	Reinforcer	Correct	Incorrect

Cues:
Appropriate / Total ___ equals ___%.

Consequences:
Appropriate / Total ___ equals ___%

Data:
Correct / Total ___ equals ___%

Positive Feedback:
1.
2.
3.
4.

Recommendations for Improvement:
1.
2.
3.
4.

Figure 1

termined by referring to the Phase and Step number on the data sheet and reading the behavior from the task sequence sheet. The "reinforcer" may have been specified by the teacher during the updating process. If so, the volunteer should so state and should specify the schedule of reinforcement. If the reinforcer is not specified, the volunteer should choose the reinforcer to be used from the consequence file. The "criterion" and "correction procedure" are stated on the program cover sheet.

The observer records data in the various columns of the form, one tally mark in each of the three sections; cues, consequences and data. Under the cue section, the following entries are possible: a) "appropriate" -- a tally mark is made here if the cue is given clearly and as stated on the program cover sheet; b) a tally is made under "no cue" when a verbal cue is not given, materials aren't presented, or if the cue is incomplete; c) a mark is made under "weak" when there is no eye contact, or the cue is not clearly stated or not presented loudly enough for the student to hear, or when a verbal cue is given but the non-verbal cue is left out or vice versa; d) an entry is made under "changed wording" when the cue is given clearly, but not worded exactly as stated on the program cover sheet; and e) a tally is made under "repeated" when the cue is repeated before the behavior occurs, reinforcement is given or the correction procedure implemented.

The overall goal to be achieved with the volunteer on a continuing basis is 90% appropriate cues. This goal allows 10% error, which may occur across any of the error categories. It has been demonstrated that this goal is obtainable within one week of training with most volunteers. Periodic observations of the volunteers are necessary to insure that this ratio is maintained.

Consequence Delivery

Since instruction of the severely handicapped revolves around the principle that the student learns through feedback, the way in which the volunteer dispenses consequences (feedback) is critical to the success of the instructional program. Essentially, the volunteer must first be aware of the consequence file which is part of every student's record and is contained on the clipboard (see discussion of the clipboard in Chapter 4). The volunteer must understand the way in which these reinforcers are prioritized in their strength with the student. A volunteer must understand that they have the choice of picking these reinforcers, but should the student's performance be poor, it is necessary for the volunteer then to choose higher strength reinforcers. As volunteers become more experienced, they will be able to make more judicious choices of reinforcers, saving the highest strength reinforcers for those times when students are experiencing difficulty with the task or learning environment.

When observing the effectiveness of a volunteer employing consequences with a student, we are concerned with a number of different dimensions. First, is the volunteer giving feedback to the student? Second. is that feedback appropriate? Third, if it is not appropriate, what is wrong with it? The data obtained with the observation form (Figure 1) provides

answers to these questions.

Whenever the volunteer responds to a behavior emitted by the student, an entry is made under the consequences section of the form shown in Figure 1. If the volunteer responds to the student's correct response with a reinforcer, which is delivered quickly and with enthusiasm, it would be tallied in the appropriate column. If part of the reinforcement is primary or tangible, it must be paired with social feedback. If the student provides the wrong answer or does not respond, a four-step correction procedure is initiated. These four elements in succession are: 1) respond "No" or some other negative verbal feedback; 2) repeat cue; 3) assist the student through the behavior; and 4) socially reinforce. If any of these four elements are missing, an entry is made under the inappropriate column of the incorrect correction procedure and the elements of the correction procedure which were missing or delivered inappropriately are also noted. If all elements are conducted correctly, a tally is placed in the column marked appropriate under correction.

If the volunteer fails to provide feedback to the student when the student responds, different entries are made. If the feedback which the student failed to receive would have been a positive reinforcer, it is entered under the no reinforcer column. If the feedback which the student was to receive would have been the correction procedure, an entry is made in the no correction/punisher column.

If the volunteer gives feedback to the student but it is, in the eyes of the observer, not appropriate feedback, it is entered in one of four columns. This is probably the most difficult area for the unskilled observer, and certainly the most difficult area for the volunteer when consequating a student's behavior. Inappropriate feedback comes in a variety of forms. First, there is what we might term "weak feedback." This is the feedback which is usually given without enthusiasm or given perfunctorily; it is the type of feedback which the critics of behavior modification frequently observe and make comments about when they say that behavior modification is a mechanistic approach. We see teachers who respond with a repetition of words, "good, good", or "okay, okay", or "all right, all right" with little enthusiasm and with little sincerity. This is considered to be weak feedback and is inappropriate. To correct this, of course, some enthusiasm must be generated. For some volunteers, their personalities make this difficult to correct. In fact, volunteers will occasionally find that they are unable to make the adjustment to develop enthusiasm and vary their responses. In those instances, it is probably best if the volunteer is given tasks which do not require interaction with the students. A variety of expressions are available which can be used by the practicing teacher or volunteer to overcome the dull, drab repetition of "good", "all right", or "okay". The most common of these is the expression "I like the way you threw that ball, kicked it, moved, etc." or "Good (name task)". Using more enthusiastic expressions such as "neat", "fantastic", "wonderful", "beautiful work" and a variety of sentences which are personally geared to the student will allow the sincerely enthusiastic volunteer to relate that sincerity to the student. Another variation of weak feedback occurs when the teacher merely repeats the student's answer. This type of feedback provides no definitive statement to the student whether his response was correct or incorrect, and without this statement, the feedback must be considered weak. Still another form of weak feedback

occurs when the student fails to respond or responds incorrectly and the volunteer corrects the student while smiling or with an enthusiastic voice, thereby not conveying to the student that the response was incorrect.

The second form of inappropriate feedback is the failure to pair social reinforcement with either primary reinforcers or other tangible reinforcers. For instance, if the volunteer is reinforcing the student with cereal bits, she must also give a verbal reinforcer as she presents the student the cereal bit. Failure to do so is "failure to pair". This is usually a very easily remedied deficiency and is often prevalent in the new volunteer. A few reminders are usually sufficient to correct it.

A third type of inappropriate feedback is the reinforcement of inappropriate behavior. For instance, a student is told that he gave a right response when he did not give the correct response. This type of error most often happens when a student's behavior is being shaped and the volunteer is to reinforce for less than the totally correct behavior. The tendency of the volunteer, anxious for the success of the student, is to reinforce the student at a performance level less than that required by the program. Inappropriate feedback may also occur when a correction procedure was delivered which was not necessary. This situation can arise when the volunteer mistook a correct response for an incorrect one or delivered the correction procedure before the student had a chance to respond.

A fourth type of inappropriate feedback is that which we refer to as "delayed". Delayed feedback occurs when the student emits a correct response and more than two seconds elapse before the volunteer consequates that response. A delay also occurs if the volunteer waits too long to deliver the correction procedure.

The entire range of observed consequences are recorded on the observation form. The goal is for volunteers to be able to deliver 90% appropriate consequences on a continuing basis. This goal allows 10% error, which may fall either in the failure to consequate or inappropriate reinforcement areas. It has been demonstrated that this goal is obtainable within a week of training with most volunteers. Periodic observations of the volunteers should be made to insure that their performance is maintained.

We have found that one of the most difficult areas for the volunteer is the determination of what to do when the student does not respond appropriately or refuses to respond. The volunteer is often unsure of how to correct the student. In an effort to respond to this difficult area, the observation form was expanded to deal with correction procedures. If one believes that feedback is the way in which a student learns, then the feedback given to a student who makes an error or refuses to respond is important. Further, a precise procedure for correcting such behaviors is needed to provide adequate guidance to volunteers. First, the student is told "no", then she is presented with the cue again and led through the behavior so that she performs it correctly; she is then socially reinforced for accomplishing it. After social reinforcement is delivered, the student is once again given the cue to accomplish this behavior. Thus, the correction procedure has these elements, all of which need to be delivered properly: 1) telling the student "no", or "wrong"; 2) readministering the cue;

3) leading the student through the behavior; and 4) socially reinforcing the student. This procedure can be modified for older, more capable students. Whatever modification is made should be consistently applied. If any of these elements are missing, the appropriate notation should be made on the observation form.

Recording of Program Data

The third area in which volunteers are observed and data recorded as to their performance is in the recording of data. As has been mentioned previously, there are essentially only two major types of data recording systems used. The first deals with the standard program data form, and the second deals with behavior problems. Each of these has a separate recording form upon which the volunteer should have been instructed. The volunteer is initially taught to record on the program data form. As the volunteer gains experience, he is taught to use the other data form. The observer of the volunteer should insure that the recordings made by the volunteer are correct. This essentially constitutes a reliability check of the volunteer's recording. Is the student being given credit for a correct response when he makes a correct response? Is the recording prompt? Is the recording unobtrusive--that is, not interfering with the conduct of the teaching lesson? As with cue preparation and presentation, the criterion level for data recording is 90% correct, allowing a 10% error factor.

After the teacher or aide observes the volunteer, the volunteer should receive immediate feedback as to his performance. Occasionally, it may be necessary to intervene during an instructional period to advise the volunteer of a correct method of cue presentation, reinforcement delivery, or data recording. Interference with a student's lesson should be kept to a minimum, although it is recognized that with the beginning volunteer, periodic interruptions may be necessary. For instance, modeling of the correction procedure is frequently necessary during the first couple of observations of the volunteer.

Thus, the process of training a volunteer consists of a short lecture which includes a demonstration by video tape, modeling for specific lessons, and finally, recording and observing the volunteer's performance in an actual teaching situation.

2. Give teaching tasks comparable to level of training.

Obviously, volunteers, like teachers, have varying levels of abilities, and their effectiveness will be based upon these abilities and their experience.

One of the most important considerations which the teacher/manager has is the assignment of volunteers to teaching tasks that are compatible to their level of ability.

One of the preferred approaches is to assign a new volunteer an area of responsibility--such as Game Skills, Basic or Leisure Time Skills.

Usually Game Skills, Basic is chosen. The novice volunteer who is assigned to teach in this area will rotate from student to student, teaching similar tasks such as striking, underarm roll, kicking, and through this experience, usually becomes proficient in those skill areas.

After the volunteer demonstrates proficiency in one area of expertise, she is ready to undertake a second curricular area (e.g. Movement Concepts, General Space). As the volunteer is learning in the second area, she can still be used in the first area with some students, allowing the teacher more flexibility in the assignment of volunteers.

3. A system of feedback is necessary as to the adequacy of the volunteer's performance.

Teachers are usually reluctant to observe the volunteer during the first few weeks of training and often times reluctant to make critical observations until the volunteer has been in the gymnasium for a few months. Some teachers feel such observations are a demonstration of a lack of confidence in the volunteer. On the contrary, it is imperative that not only volunteers but also teachers be periodically checked to determine that their interaction skills with students are maintained and that they are presenting materials to the student in the proper manner, reinforcing appropriately and maintaining the data system as required. Without these periodic checks, even the best teacher and certainly even the best volunteer, will fall into bad habits, become sloppy and lack preciseness in their teaching techniques. These observations should begin when the volunteer first participates in the gymnasium.

Observations should be conducted on a regular basis with all volunteers. (The teacher should also encourage the supervisor to make the same observation on her). The results of the observations should be presented to the volunteers and discussed with them. If video cameras and tape are available, they should be used to record a volunteer's performance for ten or fifteen minutes and later to play back the video tape. Video tape permits the volunteer to observe oneself. The teacher should be present at this reviewing so that the teacher can critique the volunteer's performance. If necessary for the volunteer's understanding, the video tape can be played back a second or third time. Remember in giving feedback to a volunteer that the rules of reinforcement apply equally well to the adult as they do to the student. Volunteers should be reinforced strongly for their good performance areas and emphasis should be on these areas. This is not to say that the poor aspects of the volunteer's performance should not be mentioned.

Rules of Thumb for Delivering Feedback

In delivering feedback to volunteers, you will be applying the same principles you have used in changing the behavior of students in your classroom. You will be seeking to reinforce those behaviors in your volunteer which you have pinpointed as critical to teaching in this educational model (i.e., appropriate cues, consequences and data collection). Conversely, you will seek to change, through negative feedback, those things

your volunteer may do or not do that are inappropriate to this gymnasium model (i.e., repeating cues, failing to reinforce, inconsistency).

You will be baselining the delivery of cues, consequences and data collection. During the baseline observation, you will not deliver feedback within the teaching session. After you have determined the skill level of the volunteer, you will begin the training process, the goal being to raise the volunteer's skill level to the established criterion. The process by which you accomplish this is the same as used in establishing new skills in your gymnasium. Training techniques of modeling, verbal feedback, video and shaping will be employed.

The rules of thumb that follow have been used at Teaching Research to deliver feedback to volunteers. We are not implying that these represent the only training techniques you should use, or that you will always use them in the suggested order. It does, however, represent an approach in providing feedback to volunteers that has been developed in the training of literally hundreds of teachers.

1. When conducting a baseline observation, wait until the end of the session to give feedback.

2. During non-baseline, or treatment observations, you should provide immediate feedback if the volunteer makes the same error twice within the same category. Example: If a volunteer repeats a cue twice, provide feedback immediately.

3. The correction procedure used when two or more errors are made within the same category is as follows:

   a. Your first treatment strategy will be to verbally prompt the volunteer (i.e., "You are changing the cue" or "Don't forget to use social reinforcement at the end of your correction procedure.")

   b. You should then mark your observation form with the appropriate mark.

   c. Should the volunteer correct herself on the next trial, you should specifically reinforce her for the appropriate response (i.e., "That was complete correction procedure.")

   d. Should the volunteer <u>repeat</u> the error, you will then model the appropriate response.

   e. Now it is the volunteer's turn again; if she now corrects herself, you will reinforce her and she will proceed with the program.

   f. If the volunteer again repeats the error, you will employ an alternate procedure. This is essentially the same strategy you employ when a student is failing on a program. The specific branch you use will be determined by the type of error

the volunteer is making and what you may already know about that volunteer. Continued modeling, viewing herself on the video, observing that specific behavior in another volunteer are all viable training procedures. Another strategy would be to have the volunteer conduct a simpler program, or work with a more compliant student.

4. When delivering feedback after the teaching session, you should begin your feedback with a minimum of two positive statements regarding his conduct of the program.

5. In pinpointing weak areas of performance, be specific (i.e., "You are repeating cues", as opposed to "You are having difficulty with cues.")

6. If a volunteer has "bombed out", select one area which you will give feedback as being weak. Generally mention the other areas but restrict your comments and treatment to the one area. Remember, we want to shape the volunteer's behavior, not make the training so aversive that the volunteer doesn't want to return the next day!

7. In giving negative feedback, use terms such as "weak area", "something you need to work on", "problem area" to describe volunteer performance. DO NOT use such terms as "wrong, bad, poor, terrible", etc., to describe their performance.

8. You should give the volunteer recommendations for improvement in those areas you pinpointed as weak. If a volunteer has done an exceptional job, you should give recommendations that would apply to a more sophisticated programmer.

9. There are, of course, exceptions to every rule. Here is one: When conducting a treatment observation of a volunteer that is in group instruction, we have found it to be very difficult as well as distracting to deliver the correction procedure while they are working with the group. We would recommend stopping your observation after five minutes and pulling the volunteer out of the activity to give her some preliminary feedback. If there are areas in which two or more errors have been made, start your correction procedure. At the end of another five minute period of observation, repeat this feedback procedure.

10. Remember, you always have the option of stopping the program if you feel things are out of control.

Video taping of each volunteer should probably occur for fifteen minutes once a month; observations without video tape should be conducted at least once every two weeks. Each observation, with or without video tape, should be followed by a critique. This schedule of observation and feedback has been found to be adequate to maintain volunteers' performance at the specified criterion levels of 90% appropriate cues, 90% appropriate consequences, and 90% correct data recording.

4. A simplified system of communication between teacher and volunteers.

One of the often repeated laments of the teacher who is handling a number of volunteers is that there is too little time to communicate adequately with the volunteer. Conversely, the volunteer complains that oftentimes the teacher does not give complete instructions.

The model advocated herein takes that difficulty into account and recommends a system that requires minimal daily personal interaction between the teacher and volunteers, but also provides a system of maximum communication.

The main subjects which need to be communicated between teacher and volunteers are these:

The volunteer needs to know which student to work with and when. The volunteer needs to know as much as possible about the student, as much as possible about the program to be administered to the student, the way in which the program is to be administered, what freedom one has with the program, specific peculiarities of a particular program as it relates to a specific student, and the way in which the data are to be recorded.

On the other hand, the teacher needs to know from the volunteer what happened when the student was taught--was there success or failure? How much success? How bad the failure? Were there any peculiarities about the lesson being taught?

The system recommended herein allows for that communication with a minimum of verbal interaction. The main communication occurs through the documents placed on a clipboard for each student. For this communication to be effective, a prerequisite exists--the volunteer must have been trained in the techniques of teaching a particular type of curriculum lesson. If this training has occurred, the volunteer is ready to focus on a student and the program for that student. The clipboard provides the means for that focus. The clipboard has been discussed in detail in Chapter 4 Gymnasium Management.

5. A System of flexible scheduling

There are three basic ways of scheduling volunteers. The first pairs a student with a volunteer who conducts all the programs for that student. Second, a volunteer can conduct programs in one curricular area and teach all students or some of the students in that curricular area. The third scheduling system combines these two.

Regardless of which system is used, a volunteer needs to know how much time to spend on a program with a student. This consideration of time is less critical when one volunteer is assigned to one student and conducts all programs for him during the day. The only timing consideration in this instance will be for the coordination of group activities with individual programs and a concern for conducting all of the programs during

the day.

Usually a time schedule which provides guidelines rather than a strict schedule is the best type to adopt. This provides the necessary parameters for the volunteer and yet gives enough flexibility to allow the volunteer to spend a few additional minutes on a program or spend less time on a program if the student is not performing well or has performed so well that the volunteer desires to administer a strong reinforcer of additional free time.

The combined system of having some volunteers assigned to areas and others assigned to students allows the teacher to accommodate to both well trained volunteers and those who are not so well trained. It also allows the teacher to accommodate to a student who may be having rather severe difficulties but who responds well to one volunteer. For instance, a certain volunteer may be able to handle a student with severe learning problems better than anyone else. Some students with severe learning problems also show responsiveness to few reinforcers; a particular volunteer may "turn the student on" more than any other person. It would be wise, therefore, to schedule that volunteer with that student to maximize the learning possibilities. A new volunteer, on the other hand, should initially be assigned students who are easier to manage.

Figure 2 is an example of a schedule posted on the bulletin board which has divided the class into time periods and allows for eight volunteers. Scheduling of this type is also valuable when the number of volunteers available may be unknown.

Thus, it can be seen that the scheduling of volunteers can be adapted to almost any type of situation in which the teacher finds herself. If there is a shortage of volunteers, scheduling should be based on priority of students. If volunteers are not well trained, the schedule should assign volunteers to tasks that they can perform; for instance, teaching all or a number of the students in one curriculum area. Finally, if the teacher has a group of well-trained and highly skilled volunteers, he can assign volunteers to individual students and can be assured that those volunteers can run those programs in the order of priority specified for those students. The teacher can communicate the programs to be run which have high priority by circling them on the cover sheet (See Figure 1 in Chapter 4).

Summary

Thus, the model uses these "Rules for the Use of Volunteers":

1. Time must be taken to train volunteers.
2. Volunteers must be given teaching tasks in the gymnasium comparable to their level of training.
3. A system of feedback as to the adequacy of the volunteer's performance must exist.
4. A simplified system of communication, not requiring verbal instruction, between the teacher and the volunteer must exist.

Volunteer's Name								
Time	Volunteer 1	Volunteer 2	Volunteer 3	Volunteer 4	Volunteer 5	Volunteer 6	Volunteer 7	Language Volunteer
8:30 - 9:00	Jennifer	Alex	Jenny					
9:00 - 9:30	Alex	Jeff		Valerie			Act. Table	Jennifer
9:30 - 10:00	Jenny	Jennifer	Alex	Deanna				
10:00 - 10:30			Jenny	Alex			Jeff	Act. Table
10:30 - 11:00			Act. Table		Alex	Scott	Valarie	Alex
11:00 - 11:30			Jenny		Jeff		Act. Table	Valarie
11:30 - 12:00								
12:00 - 12:30								
12:30 - 1:00								

Figure 2. Schedule of Volunteers

5. A system of flexible scheduling of volunteers must be maintained.

If the teacher follows these rules, she can have a system which: 1) allows for trained volunteers; 2) allows the students to receive individualized instruction; 3) provides a system of communication with volunteers; and 4) provides flexible scheduling upon the training of volunteers.

References

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Chapter 8

SMALL GROUP ACTIVITIES

Small group activities for the severely handicapped are considered valuable for several reasons. They provide opportunities for physical education skills learned in a one-to-one setting to be enhanced and generalized. For instance, having mastered the underhand roll at a target in a one-to-one setting, it is necessary that the student generalize this skill to group activities which incorporate this skill, such as the elementary game of rolling a ball at milk cartons. In addition, many physical education skills only capable of being taught in a group atmosphere are introduced and programmed here, e.g. sharing, taking turns, and following group directions. The basis of small group learning experiences is still the individuallization of cues and consequences as in the volunteer role; but the task of the teacher is much more complex in terms of planning the activities and conducting them.

Setting and Materials

Physical education facilities vary extensively from one program to the next, but it is difficult to imagine a setting that could not accommodate the small group activities described here. There are some important considerations to be made when organizing and conducting for a group of three to five students. A well-lit room with mats on part of the floor would be suitable for most activities. The use of mats on large boxes placed vertically to divide the room into smaller cubicles is necessary for some students. Equipment should be stored in such a way so it is easily accessible. Various shapes should be drawn on the floor, i.e. circles, squares, rectangles, straight and curved lines, to facilitate some of the movement concept programs described in the curriculum. Stools, chairs, benches, desks, and audio-visual aids should be made available for use in the room. Other equipment listed in Chapter 4 should be stored in proximity to the small group area so that it may be quickly obtained.

As was indicated in Chapter 3, every effort is made to use reinforcers which are a natural part of the environment. It may be necessary, however, to occasionally use artificial reinforcers to motivate performance in some more severely handicapped students. Therefore, in addition to instructional materials, it may be necessary to include some primary reinforcer and/or favorite toys. This allows the teacher the opportunity to let students engage in favorite activities or play with favorite toys as a reward for working on a "program" activity. The size of the group is important in order to provide optimum teaching efficiency. Three to five students seems to be an ideal number. This number, of course, depends on the students' developmental age, handicapping condition, and prerequisite skills.

Goals

The following is a list of goals developed for small groups of

severely handicapped students participating in physical education activities:

1. Display appropriate social skills in a group setting.
2. Generalize and maintain skills learned in a one-to-one program to a group experience.
3. Make decisions when given the opportunity.
4. Generalize individual skills into a sequence of skills which later may be incorporated into a game.

A description of how these goals are realized in the gymnasium follows.

Behavior Treatment programs

The gymnasium is an ideal environment to foster appropriate social behavior useful for both physical education and classroom activities. Acceptable student social behavior for both the classroom and the gymnasium is identified by the physical educator and the classroom teacher. Consistency of behavior treatment programs is essential regardless of the instructional setting or teacher. Proper procedures are set up to enhance those acceptable behaviors and a remediation program for those which are unacceptable. The physical environment in small groups is an ideal place to target behaviors such as proper interaction in group settings, sharing equipment, taking turns, and helping a friend.

Generalization and Maintenance of Skills

Providing physical education activities which allow opportunities for the handicapped student to generalize and maintain newly acquired skills may be the most important aspect of small group activities. Generalization occurs when a behavior learned in one setting with a particular cue is expressed in a different situation. For example, if a student masters the skill of catching a thrown ball and then learns to catch some other unrelated object like a sponge cube, generalization of the catching skill will have occurred. The instructor can assume that the skill of catching has been learned when various objects are caught successfully over a period of time.

A method used in the model classroom for teaching the generalization of skills is through the group prescriptive program. This same procedure can be used in game, exercise and leisure activities. The first step in group programming is to determine the program content based on a review of the students' individual clipboards. For instance, all of the students will be working on some basic game and exercise skills with small groups of students working on similar skills such as kicking and throwing. Therefore, group programs can be established to work on specific skills, e.g. kicking at various skill levels. phases appropriate to each student. Once a group program skill has been identified, it is necessary to baseline the program using the group program data sheet (See Figure 1). The baseline procedure used in the group setting is the same as that employed in one-to-one programming. The teacher works independently with each student, but reinforces students who exhibit good group behavior such as observing their

GROUP DATA ACTIVITY TABLE

Program Personal Space, Log Roll Cue _____

Phases Baseline _____ _____

_____ _____

_____ _____

_____ _____

Names												
Pam	Date	3/12/80										
	Phase/Step	IV	2	IV	1	III	2	III	1	II	2	etc.
	Data	0	0	X	X							
Sue	Date	3/12/80										
	Phase/Step	IV	2	IV	1	III	2	III	1	II	2	etc.
	Data	0	0	X	0	X	X					
Matthew	Date	3/12/80										
	Phase/Step	IV	2	IV	1	III	2	III	1	II	2	etc.
	Data	0	X	X	X							
	Date											
	Phase/Step											
	Data											
	Date											
	Phase/Step											
	Data											
	Date											
	Phase/Step											
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	Phase/Step											
	Data											

Figure 1. Group Program Data Sheet

peer's performance and waiting patiently. As indicated in Figure 1, three students have been baselined on the log roll. An analysis of the data indicate that Pam and Matthew need to work on Phase IV, Step 2 and Sue needs additional assistance with Phase IV, Step 1. After baselining and during the scheduled time, the teacher will conduct the program which involves presenting the cues at the skill level appropriate to each student. It is possible at this time to have two students working on catching, and one student refining her throwing skill. The number of groups established is left to the discretion of the teacher. A procedure such as this enhances the learning rate for many students because it capitalizes on the use of peer models.

Maintenance of physical education skills already learned in either the one-to-one situation or during group play is a very important aspect of the group activity. This procedure can be facilitated by keeping a list on a chart nearby of the programs that each student has completed and include those tasks in the daily activities.

Attention to Language

The teacher must be aware of the language level of each student in the classroom. The language used in physical education activities, evoked through the use of cues with the students, must be reinforced with a special emphasis placed upon encouragement of spontaneous language during group activities. Generalization of language skills can and will take place during group interaction. Many activities facilitate a language interaction among the students which may not be the case in one-to-one programming. This may involve simple responses to questions which require only a simple yes or no. This interaction may be among students or with the teacher. In group settings, the student will experience many situations where group commands are given and a group response should follow ("Everybody look over here"). These skills are very important to learn if children are going to be integrated into the public school environment. The teacher should continually reinforce those who respond appropriately and assist those who have a problem to respond appropriately, and then reinforce them.

Making Decisions

Independent thinking is an important skill for all students to develop. Small group activities give students an opportunity to make choices and decisions. The student will have occasion during free time to choose various equipment and material with which he can play. This occurs when the student has completed the organized portion of the small group activity for the day. The student may then choose to remain or go to the open play area. The teacher must be aware of whether or not the student is capable of making a choice. If the student is unable to do this, he should be taught to make decisions. A simple choice method is often used with severely handicapped students, such as "As soon as you pick up your toys, you may go outside and play." The student is then making a choice as to how soon he can be engaged in his favorite activity. Contingency cues have been found to be very effective.

Schedules

The teacher must be well planned with weekly programs decided in advance. The daily small group sessions should be from 15-25 minutes. This time frame may be fragmented into any workable units which the teacher feels are appropriate. The endurance level, strength, and degree of impairment should reflect the amount of time used. The teacher should vary the physical education program from active to quiet activities or from strength or endurance related activities so as not to fatigue the student. It is advisable to change from group to individual activities which give variety, while remembering that a consistently run program and schedule are better for all involved including parent, teacher, volunteer and students. When the weekly program has been established, the teacher must decide how each aspect of the program will be taught and the required equipment needed.

Transition from 1:1 to Small Groups

After a student has experienced some success with a new skill introduced in a 1:1 program, more advanced phases and steps may be taught in a small group environment of initially one teacher to two students, advancing to one teacher to four and five students. The number of students is dependent upon the levels at which the students perform, the ability of the teacher to manage larger groups, and the availability of volunteers.

Instructional techniques used in the small group setting are identical to those used in one-to-one programming with variation in the data collection procedure and the attention given to non-performing students. Probe data, for instance, is only taken on each student over the last two trials for each program. As previously explained in an earlier chapter, the probe procedure does not employ a correction procedure. Reinforcement is given for successful performance of the behavior. A second difference in group programming is the reinforcement the teacher must give to students who, although not involved in direct instruction, are watching the demonstration and appropriately waiting their turn.

In small group settings, some students may be incorporated into the instructional program as a peer and teacher aide. For instance, the program may be teaching the group to roll a ball underhand at the target. The target may become a second student who can assist by stopping the ball and returning it to the teacher for the first student's second trial. A student might also be asked to hold a hula hoop as a second student can work with the teacher to learn how to move forward, backward, sideways and through the hoop. In this system, the students would alternate as helpers and learners. The helper would be reinforced for positive social behavior and good helping.

Small group activities for the severely handicapped may be successfully conducted with one teacher to two students. The addition of more students, however, will require the use of a volunteer. A teacher provided with a volunteer can teach up to five students. The teacher role is essentially the same as one-to-one programming with changes in the amount of data taken (see Figure 2). The volunteer assists in reinforcing good social behavior

Program Rolling the Ball Underhand at the Target Cue _____

Phases _____ _____

_____ _____

_____ _____

_____ _____

Names													
Cindy	Date	3/12/80		3/14/80									
	Phase/Step	V	I	V	I								
	Data	X	0	X	X								
Jim	Date	3/12/80		3/14/80									
	Phase/Step	IV	2	V	I								
	Data	X	X	0	I								
John	Date	3/12/80		3/14/80									
	Phase/Step	I	2	I	2								
	Data	0	0	0	X								
	Date												
	Phase/Step												
	Data												
	Date												
	Phase/Step												
	Data												
	Date												
	Phase/Step												
	Data												
	Date												
	Phase/Step												
	Data												

Figure 2. Physical Education Group Data Sheet

such as watching the teacher, standing quietly and waiting nicely. In addition, the volunteer can point out positive aspects about another student's performance to help those who are waiting focus in on a good model.

Small Group Activities for the Moderately Handicapped

This area is generally characterized as having 5-10 students who function on a moderately handicapped skill level. The students working in this area are: 1) capable of more prolonged independent work; 2) capable of handling greater intensity of play for longer periods of time; 3) capable of working independently at a higher performance level. Group programming is a very important aspect of activities for moderately handicapped students. One-to-one programming is still used but the emphasis is on appropriate group interaction during game and practice sessions. Individual programming receives much attention but the intent is to incorporate this in group activity. The emphasis then is placed on individual mastery using the group as a learning environment.

Settings

Physical education activities may be taught in one of four settings with the moderately handicapped. First, the small activity area may be used when the program necessitates close proximity to the instructor; second, stations may be set up where students relate to the various activities and work at their prescribed level; third, a larger area may be used for group activity for individual or team-related activities; fourth, open play areas which offer the students an opportunity to engage in appropriate interaction with other students in activities of their choosing. This area may be used as a reinforcer for appropriate behavior in the one-to-one or group programmed activities.

Instruction

Moderately handicapped students whose placement and baseline information indicates that they are operating at a low level in their attempt to learn a new skill will benefit from a tightly controlled group session in which they are under the direct supervision of the instructor. Three to four students working on the same skill in the same area constitutes a primitive but important step in helping moderately handicapped students interact with other students. In this setting, students must learn to take turns, pay attention and respond with appropriate behavior during their trial as well as the trials of their peers. The instructor must be capable of running individual programs, changing cues for students at different skill levels, while attending to those students who are waiting their turn.

The students may be challenged to work independently on prescribed skills at various stations within the gymnasium. Volunteers and non-handicapped peers would be assigned to a particular station or could travel with the student as they move from one station to the next. For instance, if a unit on ball skills is taught, a program will be developed for each

student on activities such as throwing, catching, striking and hitting. The student could work independently, or in small groups at the various stations established throughout the gymnasium. As the student becomes more independent and can assume more responsibility for his own behavior, individualized instructional activities could be assembled at each station. These would resemble a task analysis of the activity and provide learning experiences which lead to a learned skill when completed. A peer tutor or volunteer would assist those students with reading or learning difficulties. A student file placed at each station would reflect any program changes due to the individual needs of the student. The instructor may determine a set time period to be spent at each station. A timer or a tape recorder with music playing would have breaks programmed into it to signify a time to rotate. Students who need assistance on finishing the number of required trials are instructed to sit on the floor. This alerts the teacher and volunteer to give assistance.

The purpose in developing physical education skills is to use them in game or leisure activities. Moderately handicapped students who have received one-to-one programming with sufficient opportunities to practice these skills in station activities are capable of successfully participating in modified forms of popular games. For instance, students who have mastered the skill of hitting a ball should be challenged to sequence this skill into an activity, i.e. Hit and Run, whereby they hit the ball and then run to the base. Only through opportunities such as these will students make the transition from successful mastery of an isolated skill to the utilization of this skill in a meaningful activity. As students develop more proficiency, efforts should also be directed toward teaching more complex forms of various games. This effort, if followed consistently over time, will result in some students successfully participating in regular physical education classes.

Assessment

Each moderately handicapped student who participates in physical education group activities has a clipboard which contains the same elements as all the clipboards in the data based gymnasium. The only difference, however, is in the data form, which is known as the daily assessment sheet. This form is shown on Figure 3.

At the top of Figure 3 is the student's name. At the extreme left is the observable behavior, the amount of time given to complete the task, and the criterion percentage. At the bottom of the graph, room is provided to record the lesson number daily. Percentages by five are delineated on the left side of the sheet with an area for the date and a check box to indicate if the work was completed on time.

Attention and Reinforcement to Students

As a general rule, the teacher or volunteer rotates attention to every student once every two minutes. Verbal reinforcement may be used as well as other signs of approval such as a hand on the shoulder or a pat on the back. The guidelines for consequating behaviors are the same as those

Observable Behavior:

Correctly completes 3 game skills, basic

Time: 20 minutes

# of Sessions Each Day: 1

Draw line to appropriate % for daily data.
● at appropriate % mark when probing.

% of Trials correct: 85

Student _____

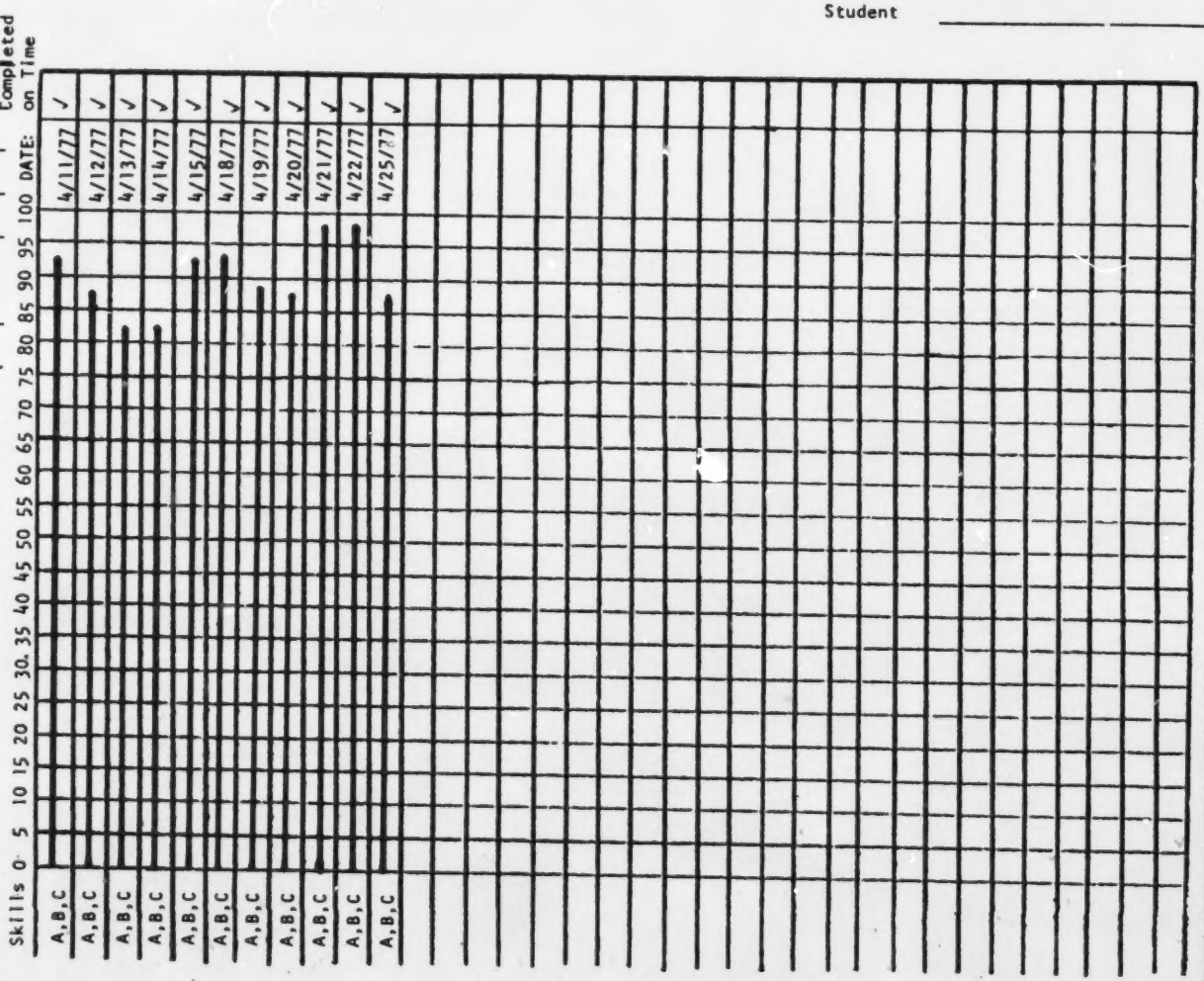


Figure 3. Daily Assessment Sheet

used in one-to-one programming.

Summary

In this chapter, a description of small group activities for the severely and moderately handicapped was presented. The use of stations was proposed as an ideal way to enhance learning rate while permitting the student to be part of a group process. As is true with the individual program, collecting data is essential to monitor the outcome of the group programming.

Chapter 9

THE UTILIZATION OF MEDICAL SUPPORT SERVICES

The passage of Public Law 94-142 has guaranteed that all handicapped children, regardless of the severity of the disability, are entitled to full educational services including physical education. Awareness of this responsibility has caused some physical education service providers concern. Frequently, one hears the observation that a particular youngster is so severely disabled that he should not participate in physical education activities. While it is true that the severely and profoundly handicapped have a higher incidence of abnormalities requiring medical attention, denial of opportunities to participate in physical education is not only legally wrong, but it also eliminates an educational service which is obviously needed.

Physical education is an educational and not a medical service. Confusion over this distinction sometimes surfaces because of physical education's contribution to physical fitness and thus the area of health. However, as defined by Public Law 94-142, physical educators must also include within their curriculum educational activities which enhance motor fitness, thereby allowing handicapped children to develop important game, dance, and movement skills. The active nature of the physical education environment does pose some concerns, however, which may necessitate the teacher interacting closely with the medical community. Occasionally, the teacher of physical education can serve a vital function by detecting physical and movement problems which require medical diagnosis by qualified personnel. Many physicians and therapists recognize today, too, that the educator's observation of how the student moves in the gymnasium may assist them understand more clearly the nature of the medical problem.

Services to the severely handicapped require a coordinated multidisciplinary approach to achieve optimum gain for the student. No one discipline can provide all of the needed services. Teachers responsible for physical education can alleviate many of their concerns about liability and safety by interacting with and using services provided by qualified medical personnel. A basic understanding of when and to whom to refer a student is likewise important information.

Utilizing Services Provided by Therapists

Students who are severely handicapped as a result of neurologic and orthopedic impairment frequently require services provided by physical and occupational therapists. Therapists share with physical educators a vital interest in the psychomotor domain. While they do not provide physical education instruction, therapists do have an in-depth understanding of normal and abnormal motor development. As a result of their assessment procedures, therapists can assist physical educators understand the move-

ment limitations of a particular youngster. Such information can help the teacher avoid the error of physically assisting a youngster move a limb which is contracted or has nerve damage. Muscular movement which cannot be self-initiated due to nerve or muscle damage requires consultation with a qualified therapist.

Therapists can also provide teachers of physical education with pertinent information such as how to lift and transfer a student from a wheelchair to the mat or how to position a severely involved cerebral palsied student. Occasionally, the physical educator may also be asked to do a prescribed exercise program with a student, developed by the therapist. The traditional role of therapists has been direct intervention with individual students. While this may be appropriate for some youngsters, maximum utilization of therapists' skills today requires that they be available to provide consultant services to educators, particularly those working with the severely and multiply-handicapped.

Utilization of Physician Services

In the past, handicapped students were frequently excused from physical education due to a medical waiver. Fortunately, this practice is no longer acceptable because of Public Law 94-142. Physicians and educators alike are pleased to see the elimination of a practice which was frequently abused and misunderstood by many. Recognition that all students, including the severely handicapped, will receive physical education instruction has necessitated renewed effort to establish effective communication channels between educators and physicians. Most physicians support physical education programs in which the scope and sequence of the curriculum is established. In addition, physicians feel comfortable with a program that is developmental, task analyzed, and data based.

Within each community, efforts must be made to identify for local physicians the individual responsible for implementing the physical education program for the severely handicapped. A person with the appropriate training, professional experience, and empathy toward the severely handicapped will alleviate many doubts that the family physician might have concerning a student's medical safety.

Parents and/or the school nurse play a key role in helping the teacher of physical education obtain necessary medical information. Working in the gymnasium with a student who has a congenital heart disorder without medical guidelines from a physician is not a prudent practice. Fortunately, Public Law 94-142 has identified medical services, e.g. consultation with a physician, as a related service which can be provided when necessary. Teachers of physical education should use this option, when necessary, by requesting medical services on the student's individualized education program form.

When to Use Support Services

Figure 1 is a partial list of what should be "red flags" to the educator

IF THE CHILD	SEEK ASSISTANCE FROM
Is excessively stiff or excessively floppy Is diagnosed cerebral palsy	Pediatrician, orthopedist, physical therapist, occupational therapist (through physician)
Jerks, stares, twitches or "blanks out"	Neurologist
Shows decided hand preference before age 3 Has fisted hands Becomes very stiff when attempting to use hands Can't get hand to mouth	Occupational therapist and/or physical therapist (through physician)
If the child has braces, crutches, walker, wheelchair	Orthopedist, physical therapist (through physician)
Is known to be visually impaired Fails to make eye contact Fails to follow object with eyes Fails to focus on objects	Opthamologist Visual Trainer
Fails to have well-established head control by three months	Physical therapist (through physician) Neurologist Opthamologist and/or visual trainer
Does not respond to noise or voice Talks through his nose Is known to be hearing impaired	Audiologist
Has joints that move abnormally Has foot, back, or other obvious deformities Can't spread knees apart 18-24 inches Is very stiff	Orthopedist
Has upper respiratory congestion Is hyperactive or sleepy Has skin rashes Has sores that do not heal Has seizures Has poor hygiene Seems too thin (nutrition)	Nurse

Figure 1. "Red Flags" which indicate the need for support services

IF THE CHILD	SEEK ASSISTANCE FROM
Self-stimulates	Audiologist Opthamologist Psychologist
Has normal or borderline I.Q., but is tactilely defensive - severe Has obvious dizziness or balance problems Has trouble in right/left discrimination Has no established hand preference after five years Has severe distractability	Occupational therapy
Has difficulty running short distances without experiencing shortness of breath Has high resting and/or post-mild exercise pulse rate	Nurse, physician

Figure 1, continued

and what medical or allied medical services might provide assistance. The left-hand column indicates signs, symptoms, and behaviors which, if evident in a student, may interfere with or prevent his education. While they may be undesirable behaviors, they may not be amenable to behavior modification techniques for their remediation. Examples of such behaviors are physiological conditions present in the child such as spasticity (stiffness), tongue thrust, seizures, sensory deficiencies, etc.

Certain ethics and laws apply to utilization of professionals. While the ethics are not as binding as laws, failure to respect them may produce a highly embarrassing, if not actually harmful, situation.

Legally, referral of a student to medical, paramedical, or other direct care personnel cannot be made without the knowledge and consent of the student's parent or a legal guardian. If a problem has been uncovered which requires the attention of a physician, the parent should be the one to make the contact.

The following are some ethical considerations for the use of support services: Physicians practicing in a speciality should be contacted by the student's pediatrician, family doctor, or parent. A nurse may see a student for evaluation of a problem but requires a doctor's referral for specific treatment. A physical therapist requires a physician's referral to see a student for evaluation and/or treatment. Direct referral may be made to speech pathology, visual training, psychology, social work, audiology, and occupational therapy. Any of these individuals may request additional information from the student's physician prior to the delivery of service. If a student is being seen by a professional, it is considered unethical to request another individual of the same profession to see the student and/or intervene without all parties being aware of the previous involvement.

The Consultative Model of Support Services

Most school districts cannot afford these support personnel on a permanent basis. Consequently, specialists who are used frequently can be retained on a consultant basis. For instance, the physical therapist can be retained on a consultant basis and visit the school one or two times a month. This interaction is sufficient because of the way in which this consultant is used. She diagnoses and prescribes for those students for whom physical therapy has been indicated by a physician. Prescriptions for physical therapy are in programmatic form and the physical education teacher and the parent of the child for whom a prescription has been written are taught by the therapist how to conduct the program. A data system to measure the progress of the student through the program is established as part of the data system in the gymnasium. These data and the progress through a program are then shared between the home, school, and physical therapist and the program is updated in the same manner as other programs for the student. If difficulties in a particular program are manifested before the next visit of the therapist, the therapist can be reached by telephone for consultation.

This method of consultation has been used at Teaching Research for the past six years. It has served in a very adequate manner all the students in the center. An analysis of why it has been successful must conclude that the consulting specialists have been able to communicate their programs in a sequenced format, have been responsive to data, and have supported the concept that parents and teachers are capable, after instruction by the consultant, to conduct the programs prescribed.

Summary

Failure to utilize expertise when it is available or attempting to fill a role for which one is neither trained nor licensed may well leave the professional open to charges of negligence or malpractice and subsequent law suit. While it is largely the medical field that has been plagued with law suits, the teachers as they deal more with severely handicapped students who have both serious educational and medical problems may well be faced with similar difficulties. Using other professionals as consultants is one way to reduce the likelihood of this problem occurring.

Chapter 10

PARENT INVOLVEMENT

This program summarizes the involvement of parents in the physical education of their handicapped children. It proposes that parents can be involved in three effective ways. The first of these is their input into the development of the individualized education programs for their children. Parents can also be used as volunteers to assist teachers in the gymnasium. The third method of involvement has parents conducting home programs in a system known as the Lunch Box Data System.

The Parent and the IEP

Public Law 94-142 has guaranteed the right of parents to be a part of the planning process to determine educational programs for their children. Parents, therefore, should help to select and to prioritize the curricular areas in which children should be taught. Because of the requirement placed on educational environments to specify the manner in which the child's progress is being measured, the implication is present that parents have a requirement to monitor that progress. In turn, the school districts should actively involve the parents to solicit their assistance in the development of the individual education program and should welcome parents monitoring the child's program throughout the school year.

Parent as a Volunteer

Perhaps one of the most productive involvements of parents is as volunteers. Volunteers provide a means of individualizing instruction to children to assist them to accomplish the tasks that are being taught to them. Volunteers have been found to be especially useful in the teaching of children in the Data Based Classroom by Teaching Research (Fredericks, et al, 1979).

The use of volunteers was supported in a study conducted by Fredericks, et al (1977) which identified indicators of competencies of teachers of the severely handicapped. The primary indicator was the ability of the teacher to increase instructional time to the maximum extent. One of the methods of effecting this increase by teachers whose students were making high gains in skill acquisitions was through the use of volunteers to conduct instruction in the gymnasium.

In discussing the use of volunteers with a teacher, it is not uncommon to hear, "But I wouldn't know what to do with them", or "They were more trouble than they are worth", or "I don't have the time to train them; they really get in my way". On the other hand, when interviewing volunteers who have been used in programs for handicapped children, the volunteers lament: "I stayed around and didn't do anything all day long." "All I did was change diapers and clean up messes. I would like to do something more constructive than that". "The teacher didn't give me adequate instructions on how to do the task and became annoyed when I didn't do it properly." Evidently, the utilization of volunteers in the gymnasium often becomes a source of displeasure not only for the teacher but for the volunteers.

Nevertheless, if certain principles are followed, volunteers can be used effectively both to their satisfaction and to the teacher's satisfaction also. These principles, developed by the Teaching Research Infant and Child Center, are as follows: 1) Time must be taken to train volunteers; 2) Volunteers must be used at teaching tasks in the gymnasium comparable to their level of training; 3) A system of feedback as to the adequacy of the volunteer's performance must be practiced; 4) A simplified system of communication, not requiring verbal interaction between the teacher and the volunteer, must exist; and 5) A system of flexible scheduling of volunteers must be used. These principles are explained in Chapter 7, Volunteers: Training and Use.

Certain salient features of effectively using volunteers should be emphasized here. For instance, volunteers can be trained in the course of a two-hour orientation and lecture followed by assignment of roles in the training environment that would allow them to teach a specific skill in the physical education area. In essence, the training of a volunteer requires that the volunteer be taught how to cue the child; that is, how to give the child instructions or how to present materials. Second, volunteers must learn how to observe a child's behavior. This observation is facilitated if a detailed task analysis which describes the behavior to be emitted by the child is available to the volunteer and has been demonstrated by the teacher. After the child performs the task the volunteer must provide to the child some feedback about the child's performance. Finally, the volunteer must record that performance in a way that can be communicated easily to the teacher.

The above elements require that the teachers have structured their education environments so that volunteers have little confusion about what and how to teach the child. The cues and materials must be precisely specified as is the task sequence for the behavior. It has been demonstrated that volunteers can be taught to reinforce the child for proper performance but that volunteers have difficulty when the child does not perform or provides the wrong response. This difficulty can be ameliorated by providing the volunteer with a standard correction procedure. The Teaching Research Infant and Child Center uses a correction procedure which has four elements: 1) provide feedback saying, "No, you did not do that correctly"; 2) recue the behavior to be performed; 3) lead the child through the behavior so that he achieves success; and 4) socially reinforce the child. Thus, even if the child does not perform or provides the wrong response, every volunteer is comfortable because they know how to respond to the child's behavior. Finally, a precise data system which allows the volunteer to record on a prescribed form the performance of the child is necessary. With these five elements, a volunteer can successfully teach children.

If volunteers are used in this way, teachers will find them to be of much assistance. Moreover, volunteers will maintain interest in volunteering because they will see their usefulness in that they are actually teaching children. Because of the data system involved, they will be able to perceive the children's progress as a result of their teaching. Parents are especially good volunteers in this role and should be encouraged to take part.

There is an ancillary benefit in parents being volunteers in the gymnasium. Because of the instruction that they receive as volunteers in how to teach children, they will learn skills which they can use with their own handicapped children in their home environment. Thus, a dual purpose is being

achieved by having the parents as volunteers. Not only is assistance being given in the gymnasium, but skills are being given to the parent which will enhance the parent's handicapped child.

The Lunch Box Data System

Many parent training models are designed to provide training to parents who do not have their children enrolled in a school program. In fact, some educators take the position that if the handicapped child is enrolled in a school program, there is little need for the parents to be trained in the techniques of teaching their own child. Two factors mitigate against this position. First, there is a body of evidence that indicates that if parents of children enrolled in a school also engage in some teaching of that child, the child's learning will be significantly accelerated. (More about this later.) Second, pressure from the parents who want to participate in the teaching of their child often requires that they be taught how to teach their child.

Let us consider the latter point first. Our experience is that many parents, especially parents of handicapped children, are interested in doing the most they can for their child and consequently, are willing to undertake home programs. Moreover, as the success of the school program increases, parents become more eager to want to help their child. Frequently, they have been discouraged about their child until the school demonstrates some success, at which time the parent's discouragement is replaced by optimism and a desire to contribute to their child's new-found growth pattern. Therefore, as educators, we need to be responsive to these desires of the parents and teach them the skills to teach their own child.

But even if the parents were not requesting this type of instruction, it is logical that parents be involved in at least some educational activities and training. For instance, it is practically impossible to toilet train a child with only a school training program; a coordinated program between school and home is mandatory if the child is going to be completely dry before reaching the teenage years.

Perhaps even more critical in the child's learning is the acquisition of language skills which also should require a home/school coordinated program. Language skills--the acquisition of sounds, blends, words, the chaining of words--can all be learned through structured programs, but it is only through the daily utilization of language, with the child's natural environment responding to his verbalization, that we can hope to make fluent language a part of the handicapped child's repertoire. Since the parents usually constitute a large portion of the child's environment and provide much of the feedback she receives each day, it is necessary for the parents to be actively engaged in language acquisition with the handicapped child to maximize the rate of the acquisition.

Certainly, the entire range of self-help skills requires that the parent become involved in instructing the child. If a teacher is teaching a child to take off her coat which she is then required to do in school, it is instructionally self-defeating when the parent assists the child to take off her coat to a greater degree than the assistance rendered at school. Each of the

self-help skills--dressing, self-feeding, personal hygiene--presents the same situation: therefore, a very closely coordinated program between school and home in the self-help area is required.

Not only in the areas mentioned above can parents be good teachers, but they can also be effective in any area of instruction. This effectiveness is demonstrated by an acceleration in the rate at which children learn and the quality and quantity of what they learn. In brief, if a parent conducts a daily ten minute to half hour training program at home in conjunction with the same training program at school, it has been demonstrated repeatedly that a child will acquire the taught skill in a significantly shorter amount of time. In fact, the data demonstrate that the systematic program conducted by the parent, in conjunction with the school program, will almost double the rate of acquisition of the skill.

Parents of each child in the program should be approached to conduct at least one home training program. In educational programs comprised of handicapped children, a group meeting is held with the parents, either as a total group, by classroom, by age group, or by handicapping conditions. The purpose of the meeting is to explain home training programs and "sell" the idea to the parents. A major selling argument has been found to be successful. The increased rate at which the child can acquire skills should be demonstrated to the parents by specific examples. (Some teachers prefer individual conferences are most appropriate for parents of integrated or mainstreamed handicapped children.)

Conferences are then scheduled with the parents to determine which program the parent desires to conduct at home. Great care must be exercised in this initial selection of a program. One of the primary rules in this selection is to choose a program with the parent that has a high probability of success. If a skill being taught at school is progressing slowly and with difficulty, this skill would not be an appropriate initial selection for a home program. Success will be further guaranteed by breaking the behavior into smaller parts (task analysis) and letting the parent teach one part at a time. Figure 1 shows the task analysis for kicking a ball with the preferred foot. This task analysis, of course, is the same one being taught in the school. When this task is being taught to the child, the parent is not faced with having to teach the entire task but only one small step at a time. Thus, the chance for the parent to see some progress is greater and the parent will be reinforced.

After the program has been selected, the parent is ready to be trained. The process of training a parent to conduct programs at home is similar to training volunteers except that in lieu of the initial group meeting with volunteers, the initial meeting with parents is individualized.

Since the same program is being conducted in the home as the school, it is important that this program be coordinated between two environments. Therefore, passing information about the child's progress back and forth between the parent and the school on a daily basis is necessary. We have dubbed this daily reporting system the Lunch Box Data System. The data sheet described in Chapter 6 is the one which is sent back and forth between the school and the home.

F. Kicking With the Toe, Preferred Foot

Terminal Objective: Student, from a standing position, will perform a kick by swinging the preferred leg backwards and then forwards striking the ball with the toe of the foot, causing the ball to roll in the direction of a target placed 20 feet away.

Prerequisite Skills: Fine Motor Skills/Lower Extremity, Skill K

Phase I — Student, from a standing position, will perform a kick by swinging the preferred leg backwards and then forwards, striking the ball with the toe of the foot, causing the ball to roll in the direction of a target placed five feet away. The teacher will assist the student by placing her hand on his preferred leg and pushing his leg backwards and then forwards causing it to strike the ball at the toe of the foot.

Phase II — Student, from a standing position, will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed five feet away. The teacher will assist the student by placing her hand on the student's preferred leg, and forcing the leg backward and prompting it forward, allowing the leg to strike the ball on the toe of the foot.

Phase III — Student, from a standing position, will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed five feet away. The teacher will assist the student by placing her hand on the preferred leg and forcing the leg backward, allowing the leg to come forward and striking the ball on the toe.

Phase IV — Student, from standing position will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed five feet away. The teacher will assist the student by placing her hand on the student's preferred leg and prompting the foot backward, allowing the leg to then come forward and strike the ball on the toe of the foot.

Phase V — Student, from a standing position, will perform a kick by swinging the preferred leg backward and then forward, striking the ball with the toe of the foot, causing the ball to roll in the direction of the target placed 20 feet away.

Figure 1

F. Kicking With the Toe, Preferred Foot, Continued.

The following steps apply to Phase V.

Steps:

1. 10'
2. 15'
3. 20'

Suggested Materials: An 8" diameter ball

Figure 1, Continued

The parent will continue to run the program, and data will continue to be coming back and forth between the school and the home. Frequently, the parent may experience problems. The parent should communicate these as rapidly as possible to the teacher so that the teacher can take remedial action. Frequently, when the parent has such problems, it is necessary to demonstrate how he or she is conducting the program in order to isolate the problem.

Even if the parent is not experiencing problems with the program, periodic conferences--at least once every three or four weeks--are recommended. During these conferences the parent should once again demonstrate how he is conducting the program at home. Frequently, all teachers begin to acquire some bad habits in their teaching, and parents are not exempt from this fault. Thus, this periodic conference serves as a maintenance check on the quality of the home programs. Therefore, this program of home/school teaching requires the closest liaison with the parent; daily communication occurs through the Lunch Box Data System but there also may be a necessity for frequent phone calls and at least once a month face-to-face interactions.

Bringing the parents together as a group periodically and letting them share their experiences in the teaching of their children has been welcomed by many parents. This type of conference is especially valuable for those parents who may be having some difficulties: after listening to how other parents do it, they may be encouraged to try even harder. For parents who are having success, the opportunity to voice that success publicly can be very reinforcing and may help to insure their continuance in the program.

Children's progress in a program such as this is accelerated beyond what can be achieved if the program is conducted in the school alone. Figure 2 shows an example of such acceleration. The program shown, modified push-ups, indicates that the child was improving his ability to do modified push-ups by increasing the number he could do at the rate of 1.3 per week when the program was conducted in the school only. When the program was conducted both at home and at school he was adding three push-ups a week to the number he could do.

Summary

This chapter has described three ways in which parents can be involved in the education of their handicapped children: 1) through recommendations for the child's program in the IEP; 2) through the use of parents as volunteers in their children's programs; and 3) through the use of parents as home teachers in the Lunch Box Data System. Each of these involvements has only one purpose--to enhance the education of the handicapped child.

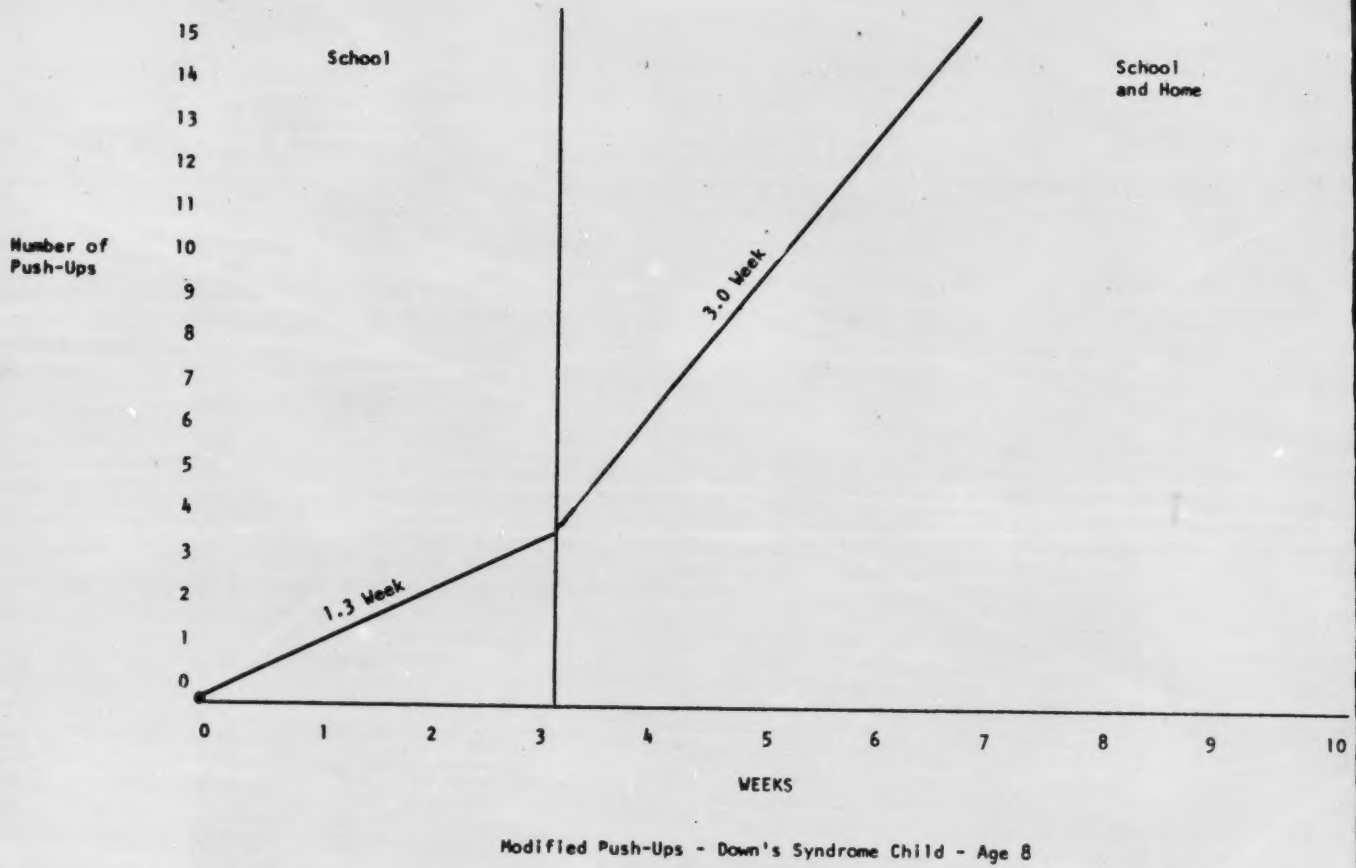


Figure 2. Example of progress of child in a coordinated school-home program

References

Fredericks, H.D., et al A Data Based Classroom for the Moderately and Severely Handicapped, Third Edition. Monmouth: Instructional Development Corporation, 1979.

Fredericks, H.D., Anderson, R.B., Baldwin, V.L., Grove, D.N., Moore, W.G., Moore, M.G., and Beaird, J.H. The Identification of Competencies of Teachers of the Severely Handicapped. Monmouth: Teaching Research, 1977.

APPENDIX A

Examples From The
GAME, EXERCISE AND LEISURE SPORT CURRICULUM

F. Personal Space - To Move the Body Sideways in Space

Terminal Objective:	Student shall move the body to the left by stepping sideways one step and then back to the right by stepping sideways one step.
Prerequisite Skills:	Gross motor, TT
Phase I	Student shall move the body to the left by stepping sideways.
Phase II	Student shall move the body to the right by stepping sideways.
Phase III	Student shall move the body to the left by stepping sideways one step and then back to the right by stepping sideways one step.
Teaching Notes:	1. If the student is non-ambulatory, another form of locomotion should be utilized.

Q. Personal Space - Stand on Tiptoes - Eyes Closed

Terminal Objective: Student stands on tiptoes with eyes closed for 5 seconds.

Prerequisite Skills: Standing on tiptoes, eyes open.

Phase I	Student extends his arms above his head, grasps high bar with both hands and closes eyes.
Phase II	Student grasps high bar with both hands, closes eyes and stands on tiptoes.
Phase III	Student grasps high bar with dominant hand, closes eyes and stands on tiptoes.
Phase IV	Student grasps high bar with four fingers of dominant hand, closes eyes and stands on tiptoes.
Phase V	Student grasps high bar with index and middle finger, closes eyes, and stands on tiptoes.
Phase VI	Student grasps high bar with digit finger and stands on tiptoes with eyes closed.
Phase VII	Student stands on tiptoes with eyes closed.

The following steps are to be used with Phases I-VII.

Steps:

1. Time: 1 second
2. Time: 2 seconds
3. Time: 3 seconds
4. Time: 4 seconds
5. Time: 5 seconds

Suggested Materials: High bar, chinning bar, or some other round stick for grasping.

Teaching Notes:

1. Caution: This program requires modification by appropriate support personnel for use with students who have muscle tone problems, paralysis or other physical handicaps.

D. General Space - To demonstrate awareness of shape and boundaries by moving within a five foot square area without touching objects within this area.

Terminal Objective: Student shall move around the inside of a 5 foot square area without touching objects placed inside the area.

Prerequisite Skills: Movement concepts, General Space, Skill C.

Phase I — Student will be led completely around a 15' x 15' square area which contains a chair.

Phase II — Student will be led halfway around a 15' x 15' area which contains a chair.

Phase III — Student will be led 1/4 way around a 15' x 15' area which contains a chair.

Phase IV — Student will independently move around a 15' x 15' area which contains a chair.

Phase V — Student will independently move around a 15' x 15' area which contains 4 chairs.

The following steps apply to Phase V.

Steps:

1. 2 chairs
2. 3 chairs
3. 4 chairs

Phase VI — Student will independently move around a 10' area which contains four chairs.

Phase VII — Student will move around a 5' area which contains 4 objects.

The following steps apply to Phase VII.

Steps:

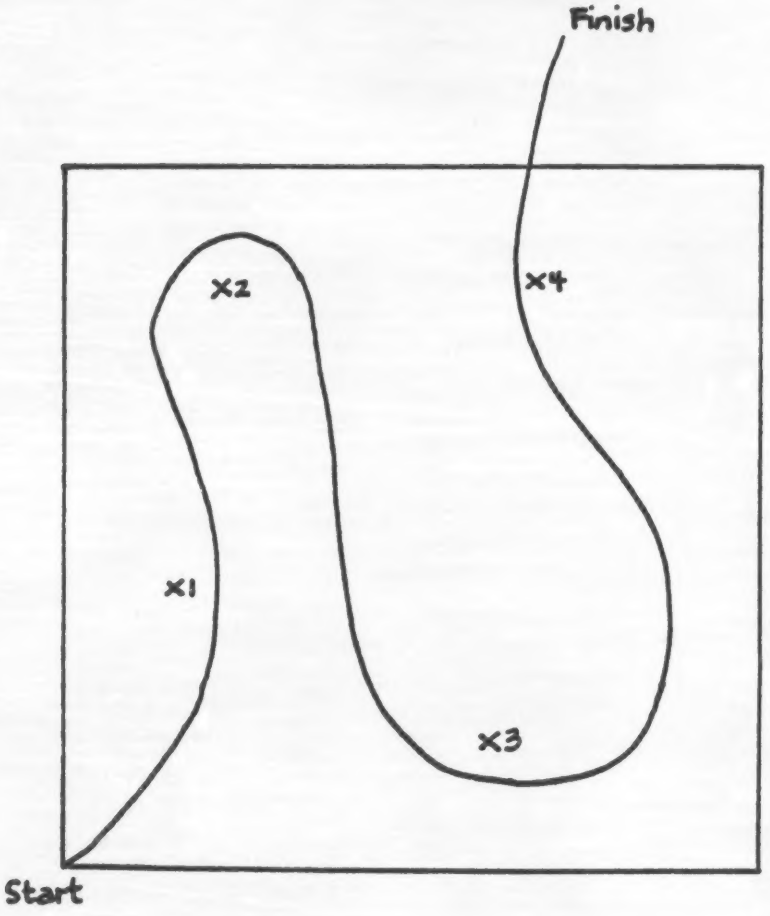
1. 4 tennis balls
2. 4 softballs
3. 4 8½" balls

D. To Demonstrate Awareness of Shape and Boundaries by Moving Within a Five Foot Square Area Without Touching Objects Within This Area, Continued.

Suggested Materials: Chalk line

Teaching Notes:

1. Prior to running this program, the teacher should make a path through the objects. She should instruct the student to follow the path throughout the sequencing of the phases.



C. Overhand Throw

Terminal Objective: The student, standing, will perform an overhand throw swinging the arm backward and then forward while stepping forward simultaneously with the opposite foot and releasing the ball at the end of the swing in a manner which causes the ball to fly in the direction of the target.

Prerequisite Skills: Game Skills, Basic - B

Phase I	Student, standing 5' from target, will swing the arm backward and then forward releasing the ball at the end of the swing in the direction of the target. Teacher will physically assist student to bring her arm back and then forward.
Phase II	Student, standing 5' from target, will swing the arm backwards and then forwards releasing the ball at the end of the swing in the direction of the target. Teacher will assist student to bring her arm back.
Phase III	Student, standing 5' from target, will independently swing arm backwards and then forwards releasing the ball at the end of the swing in the direction of the target.
Phase IV	With student standing 5' from target with one foot forward and one foot back and knees bent, student will swing arm forward releasing ball at end of swing and in direction of target.
Phase V	With student standing 5' from target and with knees bent student will swing arm backward and forward releasing ball at end of swing and in the direction of the target while teacher is pushing student's opposite side foot forward simultaneously with swing.
Phase VI	Student, standing, will perform an underhand throw swinging the arm backward and then forward while stepping forward simultaneously with the opposite foot and releasing the ball at the end of the swing in a manner which causes the ball to fly in the direction of the target.

C. Overhand Throw, Continued.

The following steps apply to Phase VI.

Steps:

1. 7'
2. 12'

J. Kicking With the Side of the Preferred Foot.

Terminal Objective: Student, from a standing position, will form a kick by swinging the preferred leg backwards and then forwards striking the ball with the side of the foot, causing the ball to roll in the direction of a target.

Prerequisite Skills: Fine Motor Skills-Lower Extremity, K.

Phase I — Student, from a standing position, will form a kick by swinging the preferred leg backwards and then forwards, striking the ball with the side of the foot, causing the ball to roll in the direction of a target placed 5 feet away. The teacher will assist the student by placing her hand on his preferred leg and pushing his leg backwards and then forwards causing it to strike the ball at the side of the foot.

Phase II — Student, from a standing position, will form a kick by swinging the preferred leg backwards and then forwards, striking the ball with the side of the foot, causing the ball to roll in the direction of the target placed 5 feet away. The teacher will assist the student by placing her hand on the student's preferred leg, and forcing the leg backwards and prompting it forwards, allowing the leg to strike the ball on the side of the foot.

Phase III — Student, from a standing position, will perform a kick by swinging the preferred leg backwards and then forward, striking the ball with the side of the foot, causing the ball to roll in the direction of the target placed 5 feet away. The teacher will assist the student by placing her hand on the preferred leg and forcing the leg backwards allowing the leg to come forward and striking the ball on the side.

Phase IV — Student, from standing position, will perform a kick by swinging the preferred leg backwards and then forwards, striking the ball with the side of the foot, causing the ball to roll in the direction of the target placed 5 feet away. The teacher will assist the student by placing her hand on the student's preferred leg and prompting the foot backwards, allowing the leg to then come forward and strike the ball on the side of the foot.

D. Cardio-Respiratory Endurance - Jogging

Terminal Objective: Student runs 300 yards.

Prerequisite Skills: Independent walking; Jogging in place.

Phase I — Student walks forward 25 yards at as rapid a pace as she can. Baseline is determined by averaging 3 trials on 3 consecutive days to get walking rate.

Phase II — Student moves forward 25 yards bearing own weight in jogging posture with arms bent, body leaning forward slightly, and with the heel of each foot striking the ground before the toe.

The following steps apply to Phase II only.

Steps:

1. Reduce baseline time in Phase I (walking) by 10%.
2. Reduce baseline time in Phase I (walking) by 20%.
3. Reduce baseline time in Phase I (walking) by 30%.
4. Reduce baseline time in Phase I (walking) by 40%.
5. Reduce baseline time in Phase I (walking) by 50%.

Phase III — Student jogs 50 yards, no time limit.

Phase IV — Student jogs 100 yards, no time limit.

Phase V — Student jogs 150 yards, no time limit.

Phase VI — Student jogs 200 yards, no time limit.

Phase VII — Student jogs 300 yards.

The following steps are to be used with Phase VII only.

Steps:

1. Time: 6 minutes
2. Time: 5½ minutes
3. Time: 5 minutes
4. Time: 4½ minutes
5. Time: 4 minutes
6. Time: 3½ minutes
7. Time: 3 minutes

Suggested Materials: Stop watch

E. Muscle Strength/Endurance - Modified Push-ups

Terminal Objective: The student will perform 8 modified push-ups in one minute.

Prerequisite Skills: Arm strength to support body weight, squat thrust.

Phase I	Student shall stand one foot from the wall facing the wall. With hands flat on the wall at shoulder height, the student will bend elbows until chin touches wall and then will push back until arms are straight. Teacher will assist with prompting at elbows to bend and to straighten.
Phase II	Student shall stand one foot from the wall facing the wall. With hands flat on the wall at shoulder height, the student will bend elbows until chin touches wall and then will push back until arms are straight.
Phase III	Student shall support his body weight with knees touching and arms in a straight support position on the mat with teacher assistance.
Phase IV	Student shall support his body weight with knees touching and arms in a straight support position.
Phase V	Student, from a front lying, bent knee, straight arm position, will lower himself to the mat as slowly as possible as the teacher supports the chest.
Phase VI	Student, from a front lying, bent knee, bent arm position, will push himself to the extended arm position supported on the knees and hands. The teacher supports the student's chest.
Phase VII	The student, from a straight arm, bent knee position, will execute 8 modified push-ups in one minute.

The following steps apply to Phase VII:

Steps:

In 1 minute the student will complete

1. 2 push-ups
2. 4 push-ups
3. 6 push-ups
4. 7 push-ups

E. Muscle Strength/Endurance - Modified Push-ups, Continued.

Teaching Notes: For wheelchair and students with limited physical strength, deletion or adaptation may be necessary.

C. Tricycle Riding

Terminal Objective: Student rides tricycle, pushing down on pedals with feet alternatively, for a distance of 50 feet in a forward direction.

Prerequisite skills: Appropriate range of motion; sitting behavior; adequate strength in legs.

Phase I — Student rides tricycle in forward direction, feet held, strapped, or taped on pedals. Teacher moves trike forward.

Phase II — Student rides tricycle in forward direction, feet held, strapped, or taped on pedals. Teacher pushes down on knees in alternate pattern.

Phase III — Student rides in forward direction, feet held, strapped or taped on pedals. Teacher cues by tapping knees alternately.

Phase IV — Student rides tricycle in forward direction, feet held, strapped, or taped on pedals.

Phase V — Student rides tricycle in forward direction, teacher holds feet on pedals by touching lightly.

The following steps are to be used with Phases I-V.

Steps:

1. 1 foot
2. 2 feet
3. 3 feet
4. 4 feet

Phase VI — Student rides tricycle in forward direction, keeping feet on pedals independently.